Issue 127 • 13th April 1991 • 88p

WIN £1,000 of games software see page 62

NEW COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA
Where can you get 8 channel sound for only £10?

ATARI
First facts on that new CD-ROM drive

PC
The 1 Gigabyte hard disk arrives **PLUS** Pick up a power portable

MACINTOSH
Where are the best places to go for free software?

GAMES
First review of Cybercon 3

PLUS
REGULAR COLUMNS ON PROGRAMMING
PD SOFTWARE
TECH TIPS
ELECTRONICS
& 40 PAGES OF
SHOPPING EXPRESS
BARGAINS !!!

ACORN'S SUPER A3000

Power-packed Archie for less than £1000! see p5

Psion says "WE ARE THE WORLD LEADERS"
But are its new Organisers? Exclusive news page 8

NOTEBOOKS:

Why these superslim PCs are all set to take over the world

DOOR TO DOOR:

The worst program ever?

Future PUBLISHING
Your guarantee of value
9 770957 064028 15

frontend

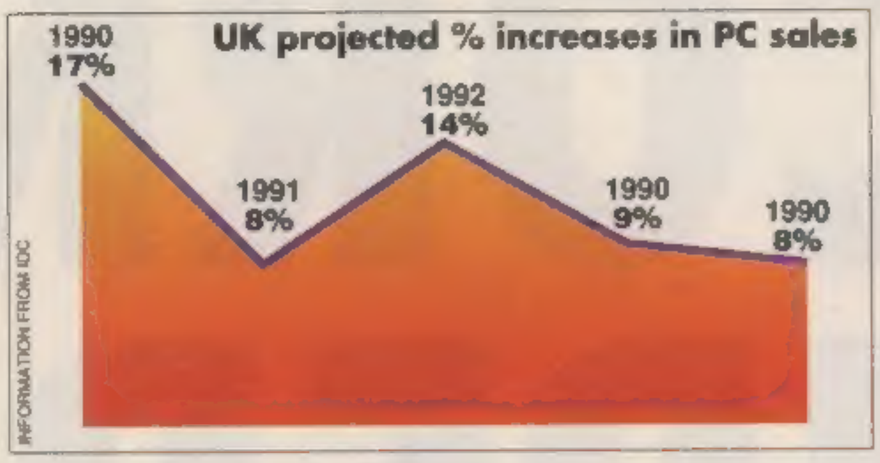
edited by Colin Campbell

PC SALES SLOW DOWN

Growth in the once booming British and European PC markets is slowing down at a considerable rate.That's the finding of leading market research firm IDC which last week published detailed figures on the state of the European PC scene.

The report predicts that the European IBM compatibles market will grow by only six per cent this year, as opposed to eight per cent last year. And the long term outlook is worse for manufacturers as the increase in value is expected to dip from 15 per cent to 12 per cent.

Sales of the PC in Britain increased by 300,000 between 1989 and 1990, but are expected to increase by as little as 70,000 next year.



A resulting price slump on 486 PCs will boost sales next year, but this is expected to be be short lived.

Simon Pearce, IDC's European PC consultant commented: "The days of rapid growth now appear to be over. User demand for PC power is already largely satisfied and long term market growth can be measured in single units."

Pearce says that users are now less willing to spend money upgrading to faster machines, and are more likely to exploit the hardware at their disposal. This, argues Pearce, is reflected in a reluctance to upgrade from 386 based PCs to more expensive 486 PCs. "The 486 is a classic case of technology moving far ahead of the actual use," he concludes.■

Computer rebuilds Pompeii

IBM Italy has produced a computerised guide to the ruins of Pompeii, site of a terrible volcano eruption 2,000 years ago.

The 140 square mile area around Mount Vesuvius has been mapped showing where all archaeological treasures were uncovered. There are also thousands of text entries on individual finds and some 9,000 digitised colour images of artefacts.

Using the information the computer system has been able to plot a convincing map of Pompeii in the First Century AD, and historians say the findings will help them understand what life was like in the ancient Roman city.

Stafano Bruschini of IBM Italy explained: "From the very beginning we aimed to achieve something more than a mere catalogue of finds. The computer screen can act as a window onto texts, archaeological and technical maps and images of frescoes and iconographic sources. We sought to create a knowledge environment of Pompeii and its environs."

Visitors to Pompeii and archaeologists will be allowed to make full use of the interactive system. ■

EAT AND ENJOY!

Talking sandwiches and singing bottles of beer might sound like the makings of a weird hallucinogenic experience, but new technology could make chattering foodstuffs a reality within a few years.

Industry minister Lord Hesketh has backed plans to develop bottles and food packaging which could give buyers verbal assurances that it is the genuine article or that it is fresh.

The initiative is being spurred on by the threat of counterfeit products coming onto the market as international trade restrictions are loosened.

The technology is a mix between a biologically triggered alarm and standard speech synthesis. In this way a sandwich could say "warning – I am past my sell by date", or a bottle of whisky could boast "I am genuine Scotch".

Products could also advertise themselves on supermarket shelves, but the prospect of a cacophony of competing sandwiches is hardly appealing.■

Price of victory

Sega games players hunting for the latest intelligence on their favourite puzzles, shoot-'em-ups and adventures should check out the *The Complete Sega Solution*.

It's a hints and tips book for the Master System and Megadrive detailing devious cheats from 200 top games. Authors Richard Monteiro and Dominic Handy reckon they've tapped into all the secrets which programmers like to keep to themselves.

It'll be out at end of this month for £9.99 from The Words Works (0225 765086).■

Maxwell backs CD-I

Robert Maxwell has a habit of putting himself about. You'll find the portly profiteer popping up wherever there's a few bob to be made.

Now the media magnate has decided to get in on the multimedia revolution. A joint-venture publishing company called Maxwell Multi Media is to produce self-teach language courses on Philips' Compact Disc Interactive (CD-I) standard.

Maxwell's latest venture will be aided by his subsidiary company Berlitz Publications, famed for travel guides and recorded language courses.

Maxwell enthused: "The combination of Berlitz, the world's premier language instruction company with Philips, the inventor of CD technology, creates a formidable partnership of software publishing and

consumer electronics experience to be based on this new multimedia format."

CD-I was developed by Philips in conjunction with Sony and Matsushita. It integrates video, audio, graphics and text through a dedicated hardware system on the standard CD format. CDI, along with Maxwell's education CDs, should be here by 1992. ■

BEDEVILLED BY BUGS?

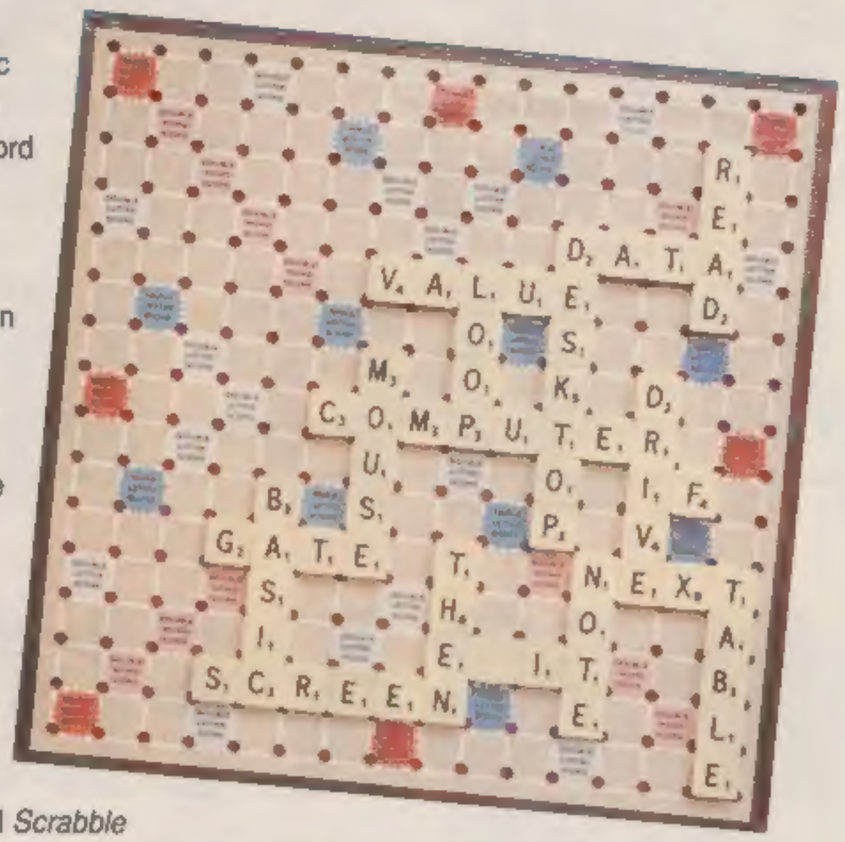
Most of us have come across the odd piece of software plagued by a few bugs – but what of a program featuring no fewer than 185 of the horrid pests?

GardenTech of Redondo Beach, California has launched *Bugs*, a computerised pest control system which will help the modern horticulturist rid his patch of all creepy crawlies.

The $129 program features information and colour pictures of the most vicious breeds of the little devils. Users can select the problem which is corrupting their greenery, and *Bugs* will work out which blighters are responsible. It will then present tactics designed to eliminate the nastiest of miniature hooligans.

***Bugs* will run on any PC running a 286 processor or higher. If you're being bugged by Californian insects then call 0101 213 372 5810.** ■

SCRAP OVER SCRABBLE



Board game giant Spear's has clamped down on a small Public Domain library for distributing a program similar to its world famous word puzzle *Scrabble*.

Enfield based Spear's Games warned The South West Software Library that legal action would be taken if it did not cease distribution of ST word game *STrabble*. Martyn Dryden, who runs the library said: "We could not contest the action. As a spare time business run by enthusiasts we can't possibly afford expensive lawyers."

Dryden maintains that distribution of Public Domain software is a non-profit making exercise and therefore not a threat to the likes of Spear's. He admitted that *STrabble* could harm sales of the official computerised *Scrabble* game (published by Virgin) but added: "It's up to the individual to choose".

Spear's legal spokesman Jeremy Spears told *Express*: "I can't really comment on this case because it's not fully resolved. But in general terms, the *Scrabble* trademark is worth millions of pounds. It helps to pay our wages and therefore we take the trouble to protect it. If people do infringe our rights then we tend to come down heavily." ■

Something special to clean up the streets

Hill Street Blues, the latest in cops 'n' robbers computer games, has been launched with the more sophisticated crime fighter in mind.

Based on the popular TV show, the game sets itself up as a crime fighting simulation. The player looks down on a small metropolis (a la *Sim City*) where 10 per cent of the population are criminals.

You must deal with muggers, pickpockets, armed robbers and serial killers. But with a whole platoon of willing cops at your disposal the odds are not completely desperate.

Tony Cavanagh of publisher Krisalis, said: "This is a sophisticated game aimed at the kind of people who enjoyed the television programme so much."

It's out now on the Amiga for £24.99 with ST and PC versions to follow. ■

Psion posts new hand-held

Psion, made famous during the yuppie boom of the mid-1980s with its Organiser I and II handheld computers, has launched a new range of pocket micros.

The HC100 range is aimed at what Psion sees as the 60 per cent of the work force not yet computerised. This means travelling salespeople and warehouse managers will have access to what the company claims is "possibly the most advanced and versatile handheld family in the world".

The new machines are based on Psion's SIBO architecture, first implemented in the MC (mobile computer) series of machines.

Priced at £395, the base unit comes with a choice of two keyboards - a 53 alphanumeric version, and a 32 key numeric and function key. No QWERTY version is planned.

The range comes with a 'fast serial' port which doubles as a charger for the Nicam batteries used to power it. Also included is a new version of Psion's OPL development language, called OPL/g. The g in this case stands for graphics.

Another feature which sets the system aside from the other handhelds in the market is the use of Solid State Disks rather than floppies. These SSDs are able to hold up to 2Mb of data. ■

For all the details of the new launches and full analysis turn to page eight.

CONTENTS

REVIEWS

SDL Goldstar
First class PC cloning – page 10

Door to door
Geographic's Amiga and PC route planner. Is it the worst software ever released? – page 53

ST database
Fresh in from Germany, the Adimens promises much, but does it deliver? – page 64

Notebooks of the nineties
Express examines the fastest growing sector of the PC market – page 58

EVERY WEEK

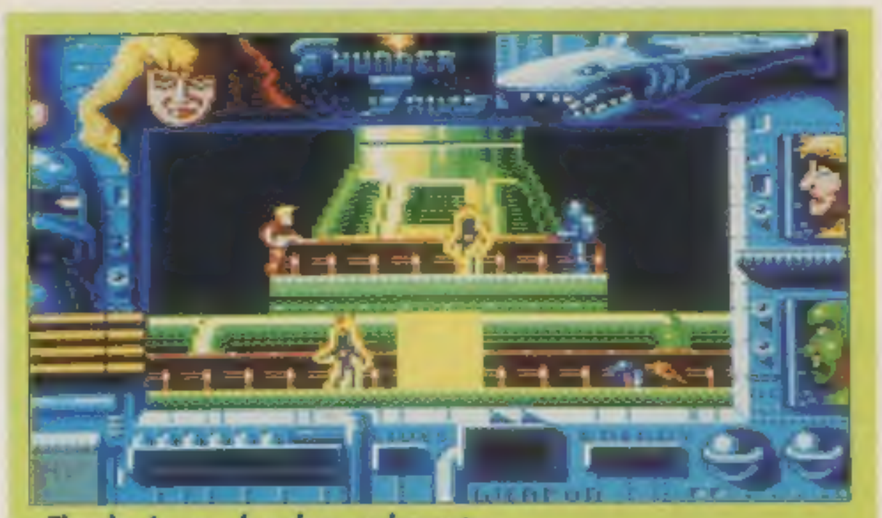
News – pages 4-8

Games Week
Hot tips and news, plus *Cybercon 3* review – page 58

Competition
£1,000 games giveaway– page 62

SHOPPING EXPRESS

Letters	13	Whole Wired World	30
Mac	16	Tech Tips	32
CPC	17	Circuit City	42
Amiga	18	PD Column	44
Archimedes	24	On-line	46
C64	25	Centrefold	48
Spectrum	27	Programming	50
ST	28		



• Thunder Jaws – *be a hero under water.*

Coin-ops are coming

Domark continues its fruitful relationship with coin-op conversion specialists Tengen with the release of four more action-packed games over the coming months.

Out this week is *Skull and Crossbones*, a hack-'n-slash pirate adventure for two players set on the high seas. Besides battling against evil pirates and looking for treasure, you also have to face the Arch Magus and try to avoid the dreaded Medusa.

Due on April 17 is *Hydra*, in which you play a member of a futuristic courier agency. There are nine packages which have to get to their destinations so you had better learn how to steer your Hydracraft quickly before your enemies get hold of your cargo.

May 22 sees the release of the baseball sim *RBI2*. It features all 26 American Pro teams, each comprising 24 real players. The game combines elements of team management as well as ballpark action.

Finally, underwater action hits the screens in June with *Thunder Jaws*. You have to face cybernetic sharks, seaquakes and volcanic eruptions in an attempt to rescue the heroin from being turned into a lizard.

All the games will cost £24.99 for the ST and Amiga while the Spectrum and Amstrad versions will cost £9.99 on cassette and £14.99 on disk. PC dual version will also be available for £29.99. ■

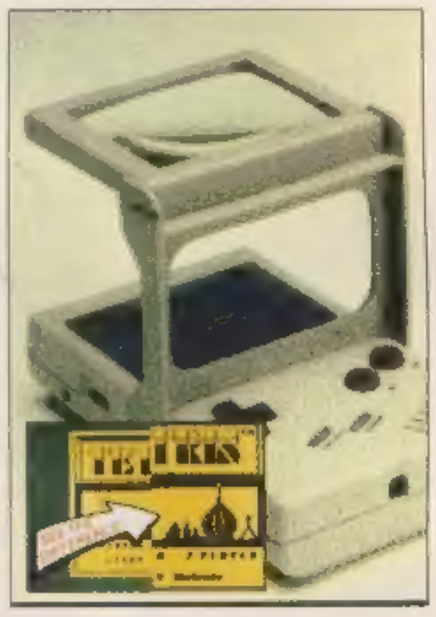
Expand your Gameboy

Nintendo Gameboy owners are going peripherals mad as sales of add-ons for the hand-held games machine go through the roof.

Articles such as the Gameboy light, magnifying glass, sound amplifier and carrying case are becoming essential purchases for discerning hand-held gamers.

Official UK distributor Curtis reckons £800,000 has been spent on add-on kit since the range was launched three months ago. Some shops say they are selling seven lights for every ten Gameboys sold.

The Gameboy light and hard carry case both retail at £9.99, while the soft pack costs £6.99. A magnifier will set you back £6.99 while the sound amplifier costs £12.99. For more details, see your dealer. ■



• *Gameboy magnifier: take a closer look*

UK firm anticipates IBM's new standard

MEGA FLOPPY – UK RELEASE

A 4Mb compact 3.5-inch floppy disk drive has been launched in the UK by Southern Peripherals. The release is in anticipation of IBM's intention to move up to the 4Mb standard by the end of this year.

Called the Mitsumi C352T2, the one inch high drive is fully compatible with 1Mb and 2Mb media, and can be fitted by upgrading your PC's floppy controller.

Although 4Mb software is not yet available it should become common next year as software publishers and manufacturers take advantage of the extra space it offers.

Empty floppies are already in the shops although, at present, they are relatively expensive. Southern says its drive will cost about £100.

The 160 track design has a 135tpi track density and with a disk speed of 3000rpm providing a data transfer rate of 1000kbps. Average access time is 94ms. For more information call 0256 819221. ■

• *Mitsumi 4Mb drive: ahead of IBM.*

14,000 cut from IBM payroll

IBM has announced plans to cut its world-wide work force by 14,000. Big Blue officials said that the company would achieve the reductions through a variety of actions, including voluntary incentive programs and attrition.

IBM officials added that the cuts are expected to yield before-tax savings of approximately $200 million in 1991, $600 million in 1992 and $800 million annually in future years.

The company also said it plans to make a single accounting adjustment of $2,300 million after taxes to recognise the company's accumulated pension obligations for employees.

IBM Chairman John Akers said: "IBM's restructuring actions are improving the company's competitiveness and we will continue to take steps to improve shareholder value." ■

Sage helps VAT victims

Quick off the mark, Sage Software is set to help thousands of business PC owners to make adjustments to their spreadsheets following the recent VAT rate changes.

The Newcastle company is sending out a fact sheet to all users of Sage accounting software which gives information on how to change software. All the company's programs provide a facility to change VAT rates, and many users are looking for simple guidelines.

Some 700,000 users have already been mailed, but if you have slipped off the user list, you can receive a free factsheet by calling 091 213 1555. ■

Scanner has the greytouch

Logitech is launching a new low cost, high performance hand-held scanner for the PC.

The ScanMan Model 32 which replaces the ScanMan Ptus will be available in early May, and costs £20 less at £129. It comes bundled with a specially developed software package called GrayTouch, which the company claims provides 32 true grey levels for professional grey scale images, though by using software manipulation you can achieve up to 256 grey levels.

The software also offers extensive editing tools, a stitching command for full page images and a diskew function to straighten out pictures. Extended memory support means that users can scan images that exceed their own system's RAM capacity. Scanned images can be saved in IMG, TIFF and PCX formats.

The ScanMan 32 requires at least DOS 3.2 to run with 1Mb of RAM recommended.

Simon Barnard, head of Logi UK, the company's British subsidiary, reckons, "There is not another hand-held scanner in this price bracket that can stand comparison with ScanMan 32." ■

• *The ScanMan 32 is a high performance entry level hand-held scanner.*

Acorn's mega chip offers speeds ten times faster

SUPER A3000 IS ON THE WAY

Acorn is set to launch an enhanced version of its Archimedes A3000 later this year featuring a hard disk and the impressive ARM 3 chip.

Sources close to the company estimate that the price of the super A3000 could be as low as £1,000 – the basic A3000 currently retails at £750.

As first predicted in *Express* (Issue 53) the new machine will run Acorn's ARM 3 processor which can handle speeds up to ten times faster than the current A3000. Acorn's corporate communications manager Brian Salter confirmed that announcements of new machines are to be made before the end of this year, but refused to go into details.

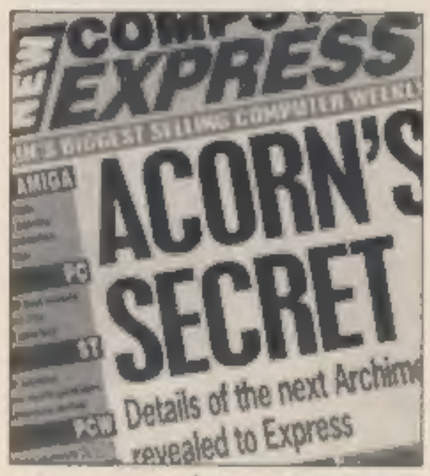
The new machine is not being pitched as a replacement for the BBC A3000, but as a faster option for schools, business and home owners. Salter commented: "The A3000 is enormously successful and there is no way we would kill off something that is doing so well. But every company has to work on research and development, and Acorn is no exception."

In addition to the processing power of the ARM 3 chip, Acorn will also offer buyers a 40Mb hard disk. The firm feels that the Archimedes has established itself as an alternative to MS-DOS technology and the Atari ST and Amiga. Now it wants to compete on price, an area in which Acorn has often been criticised.

Buyers hunting for an easy to use but extremely fast machine will not be disappointed. The ARM 3 zips along at 15 Million Instructions Per Second, in comparison an Amiga can only handle about 1MIP.

Along with the new machine, Acorn is expected to launch an Archimedes compatible laptop aimed firmly at the top-end of the market. Salter confirmed that such a machine is scheduled to make an appearance.

● Meanwhile, Acorn has denied that the top-end A400 and 500 Archimedes are to be discontinued. A spokesman told the Micronet news service that the machines would be retained despite what some see as an old fashioned design.



• *Express reveals Acorn's secret.*

• *A3000: bigger and better version by the end of this year.*

Oriental Macintosh

Mac users will be able to translate their text into Chinese Mandarin characters with a new package from BTG.

Sindex is an add-on package for the Mac Plus or above with at least 1Mb of RAM. An extension of the Apple's *Chinesetalk* package, *Sindex* lets you enter Mandarin characters and store them in an ASCII word processor, spreadsheet or database.

The software builds up special dictionaries and creates abbreviation files to facilitate even quicker entry or ultimately automatic translation. It also includes a pronunciation facility to help learn how to speak the language as well.

Sindex retails for £95. For further information contact BTG on 071-403 7586.

Huge Hard Disk

PC owners are being offered hard disk upgrades in 14 different Megabyte size options from 32Mb to a huge 1050Mb.

Plus Five peripherals reckons it can supply a hard disk for any PC. Prices start at £351 for the 32Mb drive, the Gigabyte hard disk costs £6,000.

Smart weapons research

Computers have taken another step towards emulating the human brain with the launch of an American-designed system which can recognise three dimensional objects from any angle or perspective within seconds.

Sandia National Laboratories in Albuquerque has produced a neural network system comprising a video camera, an image digitiser, processing hardware and video screen displays which can pinpoint model tanks on a vast mock-up landscape. Neural networks are processing systems which resemble the nerve cells in the brain, and unlike conventional computers, the Sandia system can learn to recognise objects through trial and error without special programming.

Previously computers could only cope with objects being moved through two dimensions, ie, from side to side. But the Sandia system can cope with the targets being placed anywhere within its field of vision and takes less than four seconds to do so.

The Sandia system is taught using multiple training sessions. At first it is fed information about the tanks as well as various other objects, and then it is tested on its ability to pick out the tanks. If it gives a wrong answer the researchers supply it with the correct information. By comparing the right and wrong answers the network 'learns' how to judge correctly; this process is called propagation.

"It forces a network to learn very specifically what is and what is not a tank," explains co-systems developer Mary Moya.

At the moment the system is being developed specifically for military use, but it could be applied to other fields. Robots in manufacturing processes could be trained to pick out components from an assembly line, or security systems could be taught to recognise badges or identifying marks on vehicles.

• *Scoop for Mindscape: the original* Paperboy.

Paperboy set to ride again

Paperboy 2, the sequel to one of the biggest selling games of the '80s, is set to become a Christmas smash this year.

Mindscape has acquired the rights from Atari's coin-op wing Tengen and is currently readying the follow-up for a September or October launch on all major formats.

The original game, which was released in 1987 by Elite, has sold over 500, 000 units and Mindscape is bullishly predicting even greater sales for the new title.

Mindscape scooped the rights to Paperboy 2 from Domark, the company which usually wins the licences for Tengen products in the UK. Minscape already has the Nintendo rights for the original zany paper delivery game.

US scares on health

● Fears that sustained use of computers can cause damage to arm muscles has prompted an American company to launch the Computer Wrist Relaxer.

The foam padded platform acts as a support for a user's wrists and arms, keeping hands straight and elbows level. Manufacturer, California-based Techmarket, claims that the Relaxer conforms with the advice of health professionals.

Techmarket says it could prevent users from developing Repetitive Strain Injury. Prices start at $10.

● Researchers in the US claim that working with a computer can make you fat.

The Californian team of fitness watchers reckon that people who use typewriters are less likely to put on weight than those who spend their days locked into a personal computer. Apparently, wrestling with mechanical word processor uses more energy than entering data into a PC.

THE WEEK IN VIEW

Following his confrontation with copyright lawyers, Martyn Dryden of The South West Software Library ponders the future of Public Domain . .

Public Domain software may be free (or nearly so), but that doesn't mean it's free of copyright. Whether it's a utility to convert ThisWrite(TM) documents to ThatWord(TM) format, The Mary Poppins demo, or Wiggle (a version of the well known board game Waggle), or if it involves someone else's intellectual property, then it may infringe their rights.

Copyright owners' attitudes vary. They may just ignore it. To a zillion-pound company, a PD library's activities are below the noise level. Or they could take it as a compliment. People admire their property, and no-one's making a profit out of it, so where's the harm?

But then there's the 'lawyer-driven' attitude: the PD item is a counterfeit, which will mislead people into thinking it's a licensed or endorsed product, and damage the owner's reputation and goodwill.

The idea of almost free software, created and distributed by enthusiasts just for enjoyment, is totally foreign to the 'suits' involved in copyright law. As my learned friends might say, the fact (if it is a fact) is not to the point. And the only way you can argue is to hire a suit of your own, impossible for a back-bedroom PD library – their hourly rate is a week's wages.

My advice is to pay up and look cheerful. At least this will minimise your legal costs.

Perhaps 40 percent of PD software is infringing somebody somewhere's copyright. If this gets stomped by the suits, then the PD scene will suffer. Users won't be able to get hold of software easily, programmers won't see their work distributed widely, and computers won't be as useful, or as much fun.

But the suits won't mind, because nobody was making any money from it. ■

• Turning puzzles inside out

Cracking crosswords

A CD-ROM program has been launched for all crossword fanatics who are searching for a way to crack brain busting puzzles.

Crossword Cracker from Nimbus Information Systems holds a database of 170,000 words – which the publisher claims covers just about every word that crossword compilers can use. By typing in the number of letters contained in the clue and any letters you already have, *Cracker* automatically lists all the possible answers. The £40 program also includes an anagram solver. Call 0600 890602. ■

Sounding out the system

An amplified three way stereo speaker system which plugs straight into your home computer has been launched by Evesham Micros.

The Zydec twin speakers with built-in amplifiers come with bass, middle and treble speakers, volume control and power supply and are compatible with the Amiga, STE and Archimedes.

Evesham's Shaun Morris said: "Unless you're using your machine with a top quality Sony television you're not realising the sound potential of your hardware. The speakers in most monitors are very basic. With this system you get full range sound."

Zy-Fi costs £39.99. Call Evesham on 0386 765500. ■

• Zy-Fi: jacks up the volume

National database set for mid 1992

COP COMPUTER TRACKS DOWN MISSING PEOPLE

The Home Office is setting up a vast national database to help the police track down missing people deemed to be "at risk".

The database of vulnerable missing people is due to go on-line in 1992 as part of the new Police National Computer. Forces around the country will be able to access the database on PCs in their stations and download information on missing people, including their names, addresses and descriptions.

The police force is obliged to keep a list of missing people under a 1979 recommendation of the Council of Europe. People categorised as "at risk" include children under 18, the over 65s, anyone suspected of injury and the mentally or physically ill.

At the moment each police force makes its own individual list, but the missing people database will be first such national listing in the UK.

A Home Office official told *Express*: "We are anxious to move towards a central register which will be of great benefit to the police force and we are hopeful that it can be put into effect by mid next year."

The Home Office is unable to give details of the system at the moment. A spokesman explained: "We have not yet got a development program. But over the next 15 months details will become a lot clearer".

The new Police National Computer, which was announced in 1989, is due to be operational by mid 1992 and is based on a H120 dual processor Siemens mainframe. ■

Millions all in the mind

One of the first steps to becoming a millionaire is never to go shopping on an empty stomach, according to software just released from software house Psych-cess.

How to live like a millionaire on an ordinary budget is an American program for the PC which analyses your spending habits and suggests ways you can make your money go further without making major cutbacks.

According to Psych-cess principal Ian Stringer, himself a psychologist, the guidance given in the program is "good sound advice based on simple ideas".

According to Stringer, if you go food shopping when you are hungry you are bound to be tempted to buy more food.

The program also advises on the dynamics of becoming wealthy and the steps necessary to become fabulously rich.

"The message is 'Am I thinking about money the right way?' Once you start thinking about it seriously then you can make the change," reckons Stringer.

How to live like a millionaire costs £50 from Psych-cess on 021 323 2282. ■

Atari spins CD surprise

• Atari's updated CD-ROM: better luck this time round?

Atari has unveiled a reconfigured version of its three-year-old CD-ROM drive. The £399 device can be connected to any ST or TT, and boasts a storage capacity of 500Mb. It comes with Cobra retrieval software for efficient management of data.

Called simply Atari CD-ROM, it can be used as a normal audio CD player and it conforms to the Hi-Sierra format and, according to an Atari spokesman, will run "loads" of CD-ROM disks.

Atari was one of the first companies to launch a CD-ROM drive when it produced the original ST compatible drive in 1988. However, that failed to make much of an impression – by the time there was enough software available to make it a worthwhile purchase, other companies had launched better machines. Now Atari hopes its reconfigured product will prove more attractive to buyers. ■

Phone listings firm disappears

DIAL M FOR MOVED . . .

British Telecom has taken out a High Court injunction against a company which advertised computer software for telephone directory listings before disappearing with thousands of pounds of clients money.

The company, Compact Information Systems, advertised to businesses seeking to avoid charges recently introduced by British Telecom for Directory Enquiry services. It claimed to have developed a software program containing all the business and domestic telephone subscribers in the UK.

Advertisements had been placed in several computer magazines offering the software package for £99. The firm operated from premises in Cardiff, employing agency staff to handle incoming calls from customers.

Cardiff police investigated the company after receiving complaints from people who had lost their money. A spokesman offered: "We have had dozens of phone calls from irate customers concerning the activities of this company. The sums involved run to thousands of pounds. We are still conducting enquiries into the disappearance.

"The company directors evidently let their fingers do the walking because they registered the company with names and addresses obtained from the telephone directory."

Other telephone software suppliers are indignant at the activities of the Cardiff company. Sector Software in Leyland has recently won a licence by BT to supply a program which gives users any dialling code in the UK.

Managing director David Batty said: "Only a small number of firms have been granted licences by British Telecom. Any customers wanting to check the pedigree of a telephone software product should contact British Telecom.

A spokesman for Telecom said: "We have been granted a High Court injunction against Compact restraining the company from publishing and selling British Telecom information. If the company fails to comply criminal proceedings will be instituted." ■

• Information from the diaries can be downloaded to PCs through the Datalink 200.

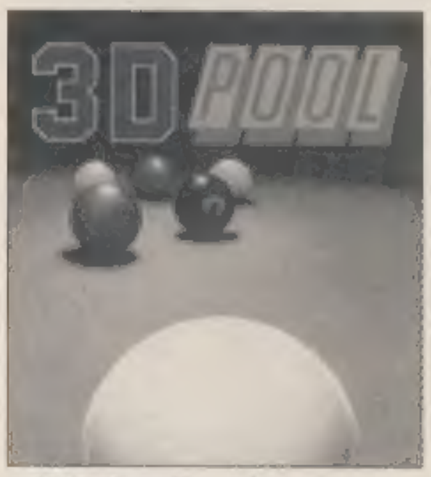
Casio picks PCs

Casio has launched a range of powerful electronic organisers along with an interface to make the top line models PC compatible.

There are three models in the Casio Digital Diaries range, the SF 4000, the SF 7500 and the SF 9500 retailing at £69.99, £119.99 and £194.99 respectively. Information for all models is input on a QWERTY stroke keyboard and each has a six line LCD display. The top model can store up to 3, 000 telephone numbers, features a schedule keeper with an alarm, a 200 year calendar, a calculator and a digital clock which can can display the local time in over 220 cities.

Via the specially designed Datalink 200 interface the SF 7500 and SF 9500 can be linked to IBM PCs for transferring information. Casio suggests that companies could build up a network of the diaries for its key staff, with information being downloaded to central PC. Datalink 200 retails for £94.99.

Casio can be contacted on 081-450 9131. ■



• 3D Pool: well worth a tenner.

Cut price classics

Two classic 3-D titles are being re-released at the budget price of £9.99 on the Mirror Image label.

Carrier Command, first released three years ago, was one of the first programs to effectively use 3-D filled vector graphics to enhance the action.

The game itself is a blend of arcade action and strategy with the player at the helm of a massive aircraft carrier. It also features a 'peace virus' which you can drop on your enemies to change their points of view.

3-D Pool offers a unique 3-D perspective of the table from any angle so that you can carefully set up your shot. Both games are out this month for the Atari ST, Amiga and PC. ■

Pascak opens windows

Popular power programming language *Turbo Pascal* is available for Windows. Publisher Borland claims that this latest version of *Turbo Pascal* will allow millions of programmers to develop programs that will run under Microsoft Windows.

Turbo Pascal for Windows makes programming for that environment simpler by using an interface that reduces the amount of code needed for Windows applications.

The Application Program Interface means that the part of the program needed to marry the code to the Windows environment already exists in a bolt on form that the programmer can simply integrate.

Turbo Pascal for Windows stands alone and doesn't need the normal Microsoft Development Kit to produce Windows applications. The £149.95 kit is available from software suppliers and an upgrade version is available to existing registered owners for £69.95. ■

• Turbo Pascal for Windows: simpler all round

Freebies for DTP trade ins

GST is offering a free presentation graphics program worth £130 when you trade in your old desktop publishing system for its low cost *DESKpress* DTP package for the PC.

From May 1 existing DTP users will be able to claim a free copy of *Davrelle*, which lets you create professional 3-D presentations on a PC, when they buy the £279 *DESKpress* package. They will just have to send a systems disk from their existing DTP software along with the *DESKpress* registration card and application form to GST to receive *Davrelle*.

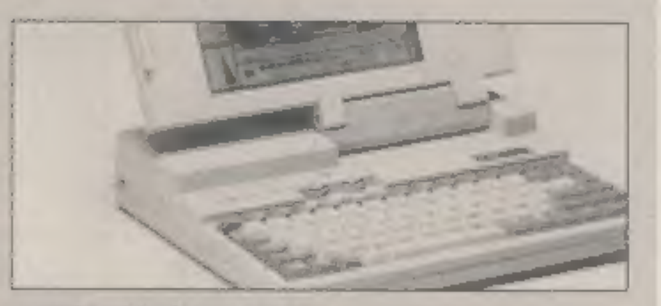
The company claims that the offer applies to users of absolutely any Desktop Publishing system, from its own *Timeworks Publisher* to *Fleet Street Editor*.

DESKpress is a low cost system which provides many of the features of professional DTP packages.

For further details contact Maria Porto at GST Software Products, Meadow Lane, St Ives, Cambs PE17 4LG, or telephone 0480 496789. ■

Double launch of powerful portables

• Viglen 32-bit: cheap.



• NESS 286: cheaper still.

Two high spec, low price 386 notebook PCs have been launched separately by Viglen and NESS.

The Viglen machine is a 32-bit 386SX called the Dossier, retailing at £1,699. With 20MHz the notebook offers 2Mb of RAM, a 20Mb hard disk and a 1.44Mb floppy drive as standard. It has a VGA liquid crystal screen, an 81 key keyboard and comes with MS-DOS and Windows 3.0. Weighing less than 3kg, it has a footprint of about 12x7 inches and comes with a carrying case. The company claims that fully charged, the notebook should work for up to three hours.

The NESS 386SX has a footprint of just less than a foot square and runs at either 16 or 20MHz. It has an 83 key keyboard and a 640x480 pixel backlit display which is VGA compatible. MS-DOS 4.01 and GW Basic are standard and the package retails for £1,399.

Viglen can be contacted on 081-997 3000 and NESS is on 081 452 8233. ■

Voice rather than handwriting recognition is the way of the future

PSION'S NEWEST

• HC100 base unit

Psion, best known in the UK for its 'personal organisers', has launched its next family of hand-held machines. Tim Smith inspects a gadget...

Potter: "possibly the most powerful handheld family in the world".

First off the blocks came the MC (mobile computer) range which boasted MS-DOS compatibilty, but it was pitched at an area above the hand-held and below the notebook. The new HC range of machines are quite definitely hand-helds. Psion makes large claims for the future of this area of computing, quoting recent Dataquest research which maintains that from now until 1994, it will see a 90 per cent growth compared to a meagre 14 per cent for laptops.

To look at, the HC bears a much closer resemblance to its Organiser II ancestors than to the MC computers which make use of the same SIBO architecture. The keypad, which comes in a choice of either 53 key alphanumeric or 31 key numeric and function, actually sports near finger-sized keys. While this might gladden the hearts of any on-road writers, they will soon be brought down to earth by the fact that there is no QWERTY keyboard planned.

The reason for this, according to chairman and managing director, Dr David Potter, is that none of the major competition, mostly to be found in the States, bother with QWERTY. The HC is aimed squarely at the corporate market. Specifically, and again American influenced, it is the Public Direct Network (PDN) users which "is the sector we're attracting with the HC range," says Potter. With a price point of £395 for a single unit, which comes without an RS323 interface and makes use of Solid State Disks (SSDs) rather than floppies, this is no surprise.

Although this implementation of the architecture is impressive; there are, according to Potter, developments occurring already by "the likes of ICL and IBM" which seek to extend the machine. To this end, Psion had made certain that the HC operates under an MS-DOS standard operating system. This is said to be fully multi-tasking as well as offering a windowing front end. A Macintosh link is also being developed although this is not expected to see the light of day until at least next month.

GET ORGANISED

With competitors such as Agenda, and Sharp eating into what was considered to be Psion's domain, does this switch away from the individual consumer to the corporate market signal the death of the Organiser?

Not according to marketing manager John Morrow: "Only an idiot could miss the potential of the SIBO architecture. I personally would like to see it extended into the consumer market. Although there is competition in the organiser market (which we invented) from the likes of Sharp, to a lesser extent Casio, and Atari with its hybrid machine, the Organiser is not dead."

Morrow also predicts that an Organiser III could be in the offing. "We are concentrating on this new launch for the moment," he said.

Potter is equally pleased to concentrate on the new Psion range, claiming that it is "possibly the most powerful hand-held family in the world at the moment". When quizzed on the likelihood of Psion abandoning the Organiser range in order to expand its 65 per cent interest in the corporate arena, Potter was adamant that "the HC is not a replacement for the Organiser".

SPEAKING IN TONGUES

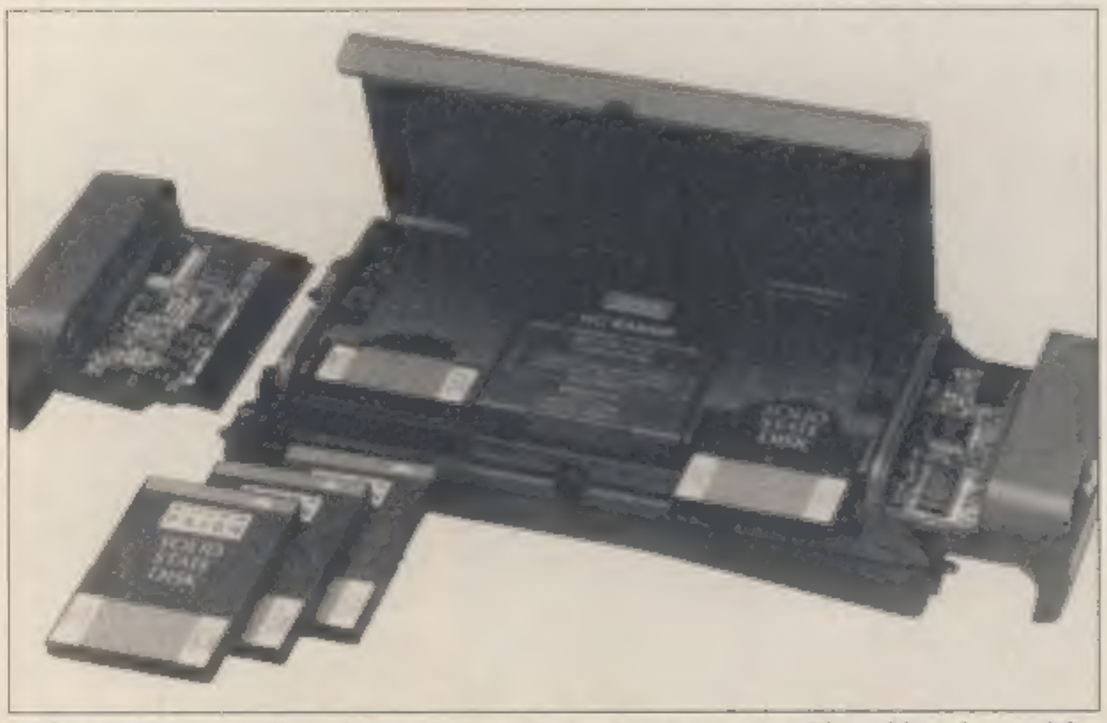
The most interesting aspect for the home user was the question of how SIBO architecture will expand in the future. With the likes of the GrID Pad and ST-Pad, as well as Epson's Portable System Machine, making use of touch-screen technology, a keyboardless system is being seriously considered by Psion.

On the possibility of a future Psion-Pad, Potter revealed: "We have built the ability for touch-pad useage into the architecture of the HC range. Intrinsic to the keyboard layout is that you can have a digitiser, which is a pointing device for data input.

"That's built-in, so we can do that now. The wider impact of the question is the recent talk of palm-top machines and character recognition. We are not looking at character recognition as a form of data entry at this stage, although in principle it can be implemented because the hardware technology is there. We don't believe that that is the key route to pursue. We do believe is very important, and parallel to this, is voice recognition.

"Voice recognition is now getting to the state where this machine can, with the correct interface, recognise a vocabulary of 120 to 160 words. This is ideal for data entry in many environments. The machine has voice and sound capabilities built-in to it intrinsically to allow us to pursue this during 1992 and beyond".

If Psion is serious about extending the SIBO architecture into this field, and if the stated claim that the Organiser is not to be replaced, then it might be possible within the next few years to see a new breed of yuppies sending voice faxes from their palm tops computers. ■



• The HC100 is a totally modular unit. Even the keyboard is removeable and has the capability to be used as a touch-pad system.

SIBO

The SIBO architecture on which both the MC and HC range of computers are based is seen by Psion as the hand-held version of a 386 PC. The name itself stands for nothing, it is merely a code word.

According to Psion, SIBO is platform architecture based on the 16-bit 80C36 static C-MOS processor. This provides multi-tasking and a full windowing interface for the user. SIBO also makes use of a type of ROM generic to Psion, and called Flash. Although it acts in the same way as Eraseable Programmable Memory (EPROM) the major difference is that Flash can be electronically erased; EPROM has to be erased using EV rays.

Essentially, SIBO is a platform for 'open system' management. This means that customising the operating system and functions can be carried out with ease by developers; an example of this is the forthcoming OS/2 emulator planned for the system. SIBO also allows for the use of Solid State Disks (SSDs) rather than conventional floppy or hard disks.

TECH SPECS

According to Dr David Potter, the new Psion HC computer is "not a product launch, it is aimed at open systems and solutions". Aside from those already mentioned, the basic HC specifications are as follows.

- **16-bit 80C86 processor.**
- **LCD 160 x 80 dot screen with switchable backlighting.**
- **128 to 512K RAM**
- **Two internal Solid State Disk (SSD) drives. 2Mb of storage per SSD.**
- **Two internal expansion slots .**
- **High Speed serial port.**
- **Rechargeable Nicam batteries.**
- **Standard 'C' and OPL/g programming and development languages. Programs written on the HC using the C language can be ported IBM PC and compatibles for tidying up.**
- **A 'Cradle' unit. The HC is connected to this unit via its High Speed serial port. The Cradle serves three main purposes: it acts as a battery charger; it can be used to download information gathered by the HC to office bound PCs and Macs; it can be used to upload data from the office desktop machine for later use.**
- **For more information telephone Psion on 071-262 5580.**

OUT NOW

THE KILLING CLOUD™

"You're onto a winner here" The One

POLICE

Beautifully atmospheric... step forward into the future" Raze 92%

"Superlative graphics" ST Format

JOIN THE SAN FRANCISCO POLICE DEPARTMENT AND UNCOVER THE SINISTER MYSTERY OF THE KILLING CLOUD

© 1990 Mirrorsoft Ltd © 1990 Vektor Grafix Ltd

Image Works, Irwin House, 118 Southwark St, London SE1 0SW Tel: 071-928 1454 Fax: 071-583 3494

IMAGE WORKS

VEKTOR Grafix Ltd

PC clones need not be cheap second class versions of the IBM archetypes. Dave Golder puts the GS 347 through the class test.

FIRST CLASS CLONING

Versatile, powerful and reliable, the Goldstar GS 347 from Silica Systems is the type of PC clone that gives PC clones a good name. Bridging the gap between number crunching high end business PCs and the more basic machines you see keeping the accounts in order at the local shop, the GS 347 is a realistic alternative to brand name PCs for those who need a more refined machine at an affordable price.

For a PC clone the GS 347 is surprisingly stylish in design, and is indicative of the general quality of the machine. The GS 347 is based on a 25MHz 386DX microprocessor, with 1Mb of RAM. The top model in the range offers a 40Mb hard disk and both 5.25 and 3.5-inch floppy disk drives and supports colour VGA graphics. In terms of performance it matches many of the brand names and could easily fit into information technology-intensive environments.

However, its real strength lies with the fact that it is so dependable and adaptable. It is not the cheapest of PC clones, retailing at just under £1,900 for the 40Mb model (though you will have to pay an extra £200 for a monitor) but the little bit extra you pay is rewarded.

UNCOMPLAINING EXPANDABILITY

We have been using the Goldstar in the *Express* office for a couple of months as the standard PC workhorse, so, as you might expect on a computer magazine, it has been ruthlessly run through a whole gamut of applications and driven a vast variety of peripherals. CD ROM drives, laser printers, scanners, OCR scanner (Optical Character Recognition) and more have all been connected up to it with no compatibility problems and it has coped with all the software we have thrown at it with no fuss at all. From Windows applications and large spreadsheets to shoot-'em-up games and graphics programs, it has taken everything in its stride. A very impressive 35 nanoseconds access time also helps to make life that little bit more pleasurable.

The GS 347 has five industry standard expansion slots and so far we have encountered no problems installing drivers cards or adding memory. This is especially impressive considering that we had many of the peripherals mentioned above connected simultaneously. Removing and replacing the casing is as simple as twisting a few screws and the interior is roomy enough not to have to worry about losing screws in the works or scraping your knuckles when slotting in cards.

The only foreseeable problem arises from the fact that the slots are arranged horizontally which restricts ventilation. As hot air rises this means that when cards at the bottom are being used, the heat will convect upwards towards the other cards and then become trapped. The result is a build up of heat which could ultimately damage the cards.

Ports and sockets have been kept strictly to the necessary minimum, but they are very clearly labelled to make life easier when connecting things up. The system unit does not have a large footprint so should fit easily on most average sized desks. But if you are really short of room, then the unit does not seem to mind standing on its side, in which case you can tuck it safely out of the way under your desk. This also helps prevent the heat build up caused by the horizontal expansion slots. The step-sculptured full-sized keyboard has that familiar clunky but comfortable IBM feel.

You have to buy a monitor separately, but the one Goldstar recommends, its own 1430 14-inch VGA colour monitor at £269.08, is serviceable enough and stands on a fairly flexible pivot joint so that you can adjust it to the most comfortable position for you.

One feature of the GS 347 which is rare among PC clones is the lock off key. This provides extra security by locking off the computer so that it will not accept any input from the keyboard. It can be used in conjunction with the password feature for double security.

BAD GRAMMAR

The manual is concise and easy to understand with clearly annotated diagrams. But it is marred by some appalling grammar. For example:

"Things what you can see on the motherboard are composed of connectors, sockets etc."

While this might seem a minor criticism, remember that most people will flick through a manual when considering which PC to buy. If they see grammar as bad as the example above, they are going to get a very bad general impression of the company concerned; if the company is that slapdash in one department, then you have to question its competence in other areas. This is a shame, because, as the GS 347 proves, you should not judge a computer by its manual. Other clone manufacturers take note!

Perhaps the best recommendation for the GS 347 is the general consensus in the *Express* office is that it is one of the most satisfyingly trouble free PCs we have ever had. This is one clone which is very difficult to distinguish from the real thing, and that is no bad thing.

GS 347 QUICK REFERENCE

Based on a 25MHz 386DX microprocessor with 1Mb of RAM as standard the GS 347/25 with a 40Mb hard disk and both 3.5 and 5.25-inch industry standard floppy drives. MS DOS 4.0 and GW-BASIC 3.2 are bundled with the package. It retails at £1878.83 including VAT.

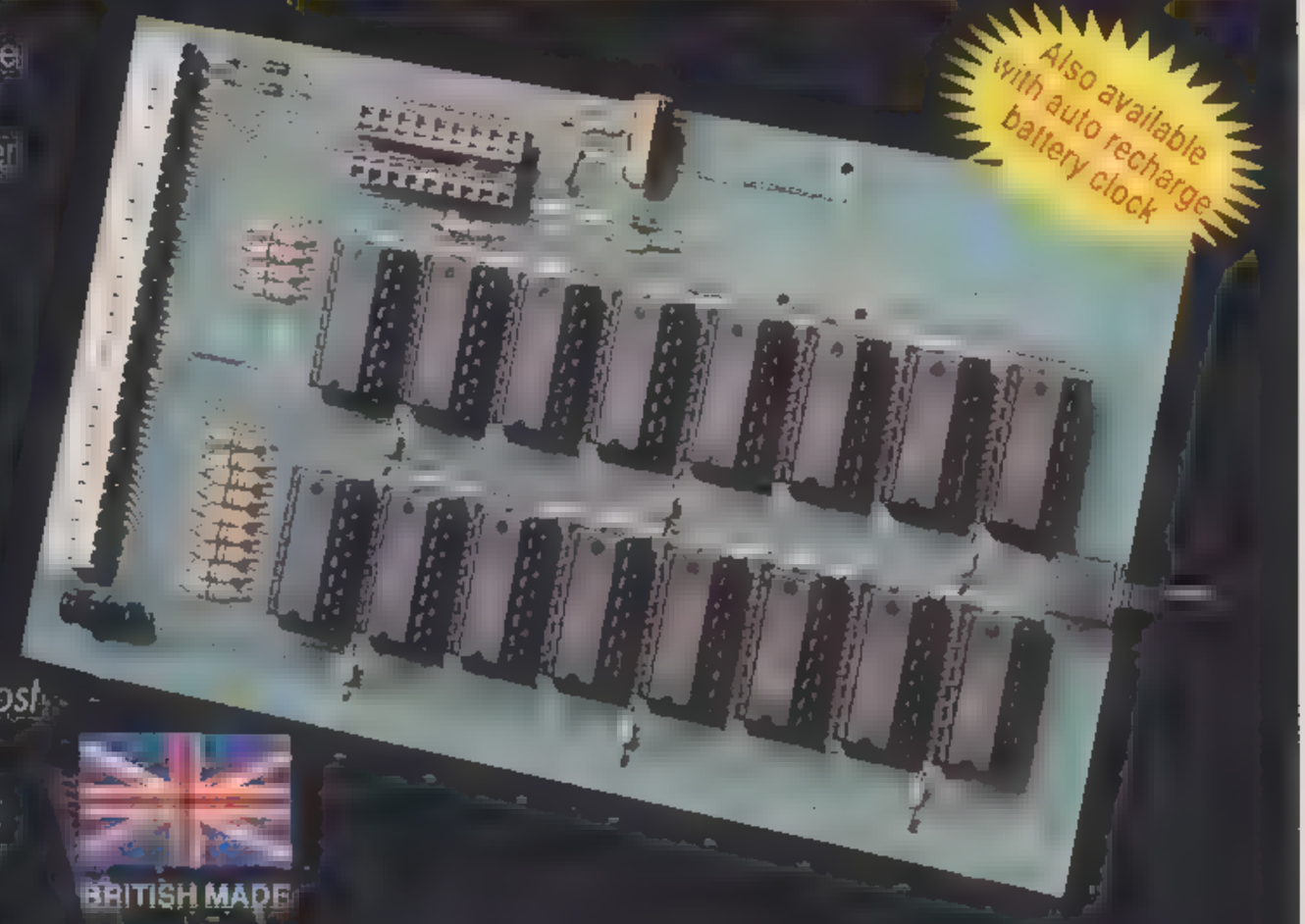
The Goldstar 1430 14-inch VGA colour monitor retails at £269.08.■

Silica Systems can be contacted at 1-4, The Mews, Heatherley Road. Sidcup, Kent DA14 4DX or telephone 081-309 1111.

AMIGA 500 MAMMOTH ½ MEG UPGRADE

LATEST DESIGN INCORPORATES 'CHIPMEN' OPTION AT NO EXTRA COST!

- Increases computer memory from normal ½ megabyte to 1 megabyte
- Includes disable switch/incorporates high quality silver coated pin connector
- 16 bit technology
- Fit in minutes
- Direct replacement of Commodore A501 expansion
- Includes "CHIPMEM OPTION" Phone for details
- 12 month warranty
- In stock now!



£29.00

Price includes VAT and post and packing

Tel: 0582 491949

BRITISH MADE

Send order with payment to:

WTS ELECTRONICS LTD, Chaul End Lane, Luton, Beds LU4 8EZ

SOUNDTRAP 3 AUDIO SAMPLER

~~37.50~~ SOUNDTRAP 3 29.95

1. HIGHEST QUALITY
2. SMALLEST ON THE MARKET
3. FITS A1000 OR A500/2000
4. PRINTER PASS-THRU
5. GAIN CONTROL
6. SOFTWARE, SCREWDRIVER & LEAD INCLUDED.
7. COMPREHENSIVE MANUAL

Unless otherwise stated, all our products carry a 12 months warranty, plus Omega Projects prided UNLIMITED SU

MINI-MIDI INTERFACE + ---SOFTWARE---

~~24.99~~ MINI MIDI 19.95

1. HIGHEST QUALITY
2. SMALLEST ON THE MARKET
3. FITS A500/2000/1000**
4. DATA INDICATORS FITTED
5. 2 METRES CABLE BUILT IN
6. FULLY OPTO-ISOLATED
7. TRIED & TESTED DESIGN

**A1000 requires special adaptor

45 Meg A590 .....429.95 130 Meg A590 ...629.95
90 Meg A590 .....529.95 179 Meg A590 ...729.95

THE A590 HARD DRIVE IS ALSO CAPABLE OF TAKING MEGABYTES OF RAM. IF PURCHASED AT THE SAME TIME, JUST ADD £55.00 TO THE TOTAL.

AMIGA A500
BASE PACK
329.95

AMIGA A500
SCREEN GEMS PACK
374.95

AMIGA A500
1 MEG BASE PACK
352.95

AMIGA A500
1 Meg SCREEN GEMS PACK
397.95

A500 replacement mtl. drive	£54.95
A2000 internal drives	£59.95
A3000 internal drives	£59.95
45Meg SCSI 3.5" hard drives	£239.95
90Meg SCSI 3.5" hard drives	£349.95
136Meg SCSI 3.5" hard drives	£475.95
182Meg SCSI 3.5" hard drives	£535.95
A590 CMOS RAM chips (512K)	£25.00
B2000 18 pin DRAMS (2Meg)	£109.95
256*1 DRAMS 150nS	£0.99
1.3 ROMS	£34.95
A3000 RAM 256*4 80ns 1Meg	£65.95
A3000 RAM 1024*4 80ns 4Meg	£299.95

AMIGA A1500 COMPUTER
INCLUDING SOFTWARE NO MONITOR
699.99
INCLUDING SOFTWARE & MONITOR
1099.99

512K with clock + switch	£32.95
IN500 with 1.5Meg installed	£99.95
SIN500 OK	£85.95
SIN500 with 2Meg installed	£175.95
X-RAM OK (for A500/1000)	£175.95
X-RAM with 2Meg installed	£279.95
X-RAM with 8Meg installed	£529.95
Octabyte OK (for B2000)	£140.95
Octabyte with 2Meg installed	£249.95
Octabyte with 8Meg installed	£499.95
Inmate OK + SCSI + 68881 Soc.	£284.95
Inmate + 2Meg + SCSI + 68881 Soc	£350.95
4 channel audio mixer + mic	£34.95
Sound Trap 3 + Mini-Midi	£47.50
Sound Trap 3 + Audiomaster 2	£54.95
Sound Trap 3 + Audiomaster 3	£84.95
Mini-Midi + Music-X	£114.95
Audiomaster 2	£29.95
Audiomaster 3	£54.95
X-Copy Professional v3.1	£32.95
Byte 'n' Back (h/disk backup) v3.0	£19.95
Music-X v1.0	£49.95
3.5" ext. drive + on/off switch	£59.95
3.5" ext. + track counter	£88.49
A590 hard disk OK	£294.95
A590 hard disk 2Meg	£354.95

68030 ACCELERATOR CARDS FIT A500/2000/1000 FROM **£339.95**
CALL FOR THE KEENEST PRICES ON THE FASTEST 68030 AVAILABLE

KCS Power Card (PC Emulator)	£229.95
AT-Once Card (PC/AT Emulator)	£195.95
5.25" ext Disk Drive (40/80 TRK)	£109.95

OMEGA PROJECTS
14 DERWENT CLOSE
CULCHETH, WARRINGTON,
CHESHIRE, ENGLAND,
WA3 5DY

ALL CHEQUES, P.O.'s etc should be made payable to OMEGA PROJECTS
We also take Access, Visa, Mastercard & Eurocard

23way connector no hood	£1.49
23way connector + hood	£1.99
X-Copy hardware	only £9.95
3.5" blank disks	0.49
capacity disk boxes	£1.50
40 capacity disk boxes	£4.50
80 capacity disk boxes	£4.95
Dynamic microphones	£9.95
Condenser microphones	£14.95
Pair Hinari speakers	£19.95
Pair Panasonic speakers	£29.95
Joystick extension lead	£2.50
1.2 metre midi leads pair	£2.95
3 metre midi leads pair	£3.95
metre midi leads pair	£4.95

512K RAM
inc. CLOCK & SWITCH
£24.95
21.95 NO CLOCK

FATTER AGNUS CHIPS
NOW IN STOCK AT ONLY
£59.95
WHILE STOCKS LAST

ALL PRICES INCLUDE VAT

68000 14Mhz SWITCHABLE
£42.50
NOW PCB MOUNTED

0925-763946 FOR ORDERS & TECHNICAL QUERIES

0860-795260 IF WE ARE OUT OF THE OFFICE

OPENING TIMES:
MON-FRI : 10.00 am - 6.00 pm
SAT: 10.00 am - 5.00 pm

HAVE YOU GOT AN A590 HARD DRIVE THAT IS NEARLY FULL?
IF SO, DON'T DESPAIR WE CAN UPGRADE YOU!!
IF YOU ARE STILL UNDER WARRANTY, THEN YOUR OPTION IS EXPAND EXTERNALLY. AND IF YOU ARE NOT, THEN EXPAND INTERNALLY.....

ALL DRIVES COME WITH CABLE & INSTRUCTION GUIDE

DELIVERY EXTRA

EXTERNALLY		INTERNALLY	
45MEG	339.95	45MEG	259.95
90MEG	449.95	90MEG	369.95
136MEG	575.95	136MEG	495.95
182MEG	635.95	182MEG	555.95

REPLACEMENT
A500
INTERNAL DRIVE
£54.95

WIN A PC COMPETITION

INTRASET LTD

Tel: 025 72 76800 (Main office & 24 hr order line)
Helpdesk 0490 3284 (weekdays 3-4pm)
Fax your order on 025 72 74753

Access VISA AMERICAN EXPRESS

All prices include P&P and VAT. Overseas orders please add £5.00

CASHMASTER

HOME AND BUSINESS ACCOUNTS

- Master your own finances. CASHMASTER is the easiest to use, most versatile accounts program yet written.
- CASHMASTER is suitable for both small business accounts or home finance use.

We wrote CASHMASTER for our own use out of sheer frustration with the other so called easy to use packages. CASHMASTER allows you to input entries in one easy operation and yet allows you to extract the absolute maximum of information in an impressive array of statements and reports: just look at its range of features:

- Easy natural data entry - just like a handwritten ledger.
- Full VAT analysis or omit VAT altogether if you wish.
- Any amount of ledgers at one time.
- No set time periods, span any time period - no one year limit.
- Reports can be produced over any time span (1 day to 100 years)
- Up to 100 user definable Class and 20 Accounts Codes.
- Detailed statements by selected Classes or Accounts.
- Profit & Loss Statement.
- Tagging of entries for report selectivity.
- Entries can be inclusive or exclusive or zero VAT.
- Automatic repeat of entries (standing orders etc.) yearly, half yearly, quarterly, monthly, fortnightly or weekly.
- Insert entries anywhere in ledger, CASHMASTER automatically sorts into date order.
- Search and find option on any entry anywhere within ledger.
- Reports can be output to screen, printer or disk file.
- Reference field for every entry (invoice no. cheque no. etc.).
- Split and merge ledgers at any time.
- All functions available from main programme screen, Class and Accounts codes visible at all times.
- FREE pop up running total calculator called up with one key press.

CASHMASTER IS THE MOST USER FRIENDLY, POWERFUL AND VERSATILE ACCOUNTS PACKAGE YET - YOU WON'T BE DISAPPOINTED.

And now available with...

CASHMASTER INVOICING & STOCK CONTROL

- Full customer data file - easy to find account records.
- Full stock data file, price lists, re-order lists.
- Full invoicing with user defined messages.
- Full invoice editing, invoice to & deliver to fields.
- Pre-paid, account or credit note, full VAT facility.
- Settlement, no return & line discounts.

Stand alone invoicing/stock control or integrates fully with CASHMASTER for a FULLY FEATURED ACCOUNTS/INVOICING PACKAGE costing less than a quarter the price of its rivals.

CASHMASTER £39.95
CASHMASTER INVOICING £39.95
BOTH PROGRAMMES TOGETHER £69.95

£££ PROFIT FROM YOUR MICRO ££££

RECESSION? WHAT RECESSION?

- Make your Micro earn!
- Whatever make of micro you have you can use it to make a good income even if you only have a couple of hours spare each week!
- This is not PIE IN THE SKY, MAKE A MILLION BEFORE BREAKFAST nonsense but a true report of exactly the sort of steps that we ourselves took at INTRASET.
- We have put together a package of easy, sensible business ideas which can easily be used by anyone with any Micro.
- NO COMPUTER EXPERTISE REQUIRED.
- Earn £££'s from home doing what you enjoy doing - using your computer!
- You probably already have everything you need to start earning.
- Hundreds of potential customers in your area who will GLADLY pay for your services. We tell you how to find them!
- Part time or start your own full time business. Ideal for housewives/husbands, unemployed etc. Very little capital outlay on projects.
- Full step by step sixty page book PROFIT FROM YOUR MICRO comes complete for just...

£14.95 inclusive

SPECIAL DISK DEAL

DISK	£ 10	£ 50	£ 100
3" CF2 (AMSOFT)	19.00	92.50	180.00
3 1/2 DSDD	6.90	32.00	60.00
5 1/4 DSDD	3.90	19.00	37.00

GENUINE HIGH QUALITY DISKS

POOLSMASTER

The Football Pools Predictor

"A LICENCE TO PRINT MONEY" - Mr F C Hammond of Essex
"WE HAVE WON MANY THOUSANDS" - Mr P E Roberts of Dorset

- Just a couple of the many unsolicited testimonials about this truly amazing Football Pools Predictor Programme which has consistently astounded us with its accuracy. Check out its features:
- Predicts homes, aways and draws.
- No fiddly typing of team names: unique indexing system for quick entry of fixtures and results just type in the results each week from your usual newspaper and the programme updates itself.
- Uses scientific formula which is the result of many years study of the football pools to give a strike rate which is consistently higher than the laws of average.
- Also has a SEQUENCE PREDICTOR option in addition to form Predictions which analyses coupon number sequences. This option has astunded us in the past and continues to do so.
- Can be used for league and cup matches. Updates season after season. No need to buy a new copy every season.
- Send for POOLSMASTER today and increase your chances of that JACKPOT. Comes complete with manual and informative Pools Guide.

DISKS AND TAPES £24.95

★ ★ SPECIAL OFFER ★★

SPECIAL COMPENDIUM DISKS/TAPES
POOLSMASTER/COURSEMASTER £44.95.
BUY ANY THREE PROGRAMMES AND
RECEIVE PROFIT FROM YOUR
MICRO FREE OF CHARGE.

THE GRAPHOLOGIST

HANDWRITING ANALYSIS PROGRAMME

"UNCANNILY ACCURATE" - 9000 PLUS MAGAZINE

- Analyse YOUR handwriting, or your partners, friends etc. What are they REALLY like! Your handwriting always reveals your true nature, state of health etc.
- This programme is a must for anyone interested in handwriting analysis, both expert and beginner alike.
- The programme will provide an analysis of a subject's handwriting ranging from a simple signature analysis to a full 15 page complete character report. Ideal for prospective employers, experienced graphologists or anyone interested in this fascinating art.
- All you need is a sample of the subjects handwriting and follow the simple on screen instructions. Upon completion you are left with an in depth report detailing all aspects of your subjects character from career ambition, state of health through to sexual preferences and megalomania!
- You may even edit this report using your word processor for representation to your subject/client.

THE GRAPHOLOGIST is a must for serious business use or simply have loads of fun entertaining your friends whilst learning the finer aspects of this fascinating subject.

- COMPLETE WITH MANUAL OF GRAPHOLOGY

Price £49.95 inc. VAT and P&P

All programmes available for IBM/PC & compatibles, all Amstrad PC's, Amstrad PCW's, Atari, Amiga, CPC 6128 (unless otherwise stated). Perm-Master also available for Commodoere 128 disk. Coursemaster and Poolsmaster also available for all Amstrad CPC's, all Spectrums and C64 & 128

COMPETITION RULES

Every purchase made qualifies you to enter our competition draw. The total value of your purchases will determine the prize won.
There will be one 1st prize only per draw.
Spend up to £20.00 - 1st prize = a Star LC printer.
Spend up to £40.00 - 1st prize = Amstrad PC1512 SDMM
Spend over £40.00 - 1st prize = Amstrad PC1640 SD colour.
5 runners up will each win full set of Intraset software as above. Intraset's decision final on all matters.
Send SAE for list of winners.
Draw dates 28/9/91.

COURSEMASTER

THE COMPUTER HORSERACING TIPSTER PROGRAMME

- BEAT THE BOOKIE FOR A CHANGE!!
- RATES ANY RACE using racecard in any daily paper or racing paper - BOTH FLAT AND JUMPS.
- Gives clear forecast of best selection PLUS second and third for Tricasts etc. and even recommends type of bet.
- Works out your WINNINGS on most popular types of bet ie. SINGLES, DOUBLES, PATENT, YANKEE, CANADIAN, etc.
- MAINTAINS A BANK ACCOUNT - Bet like a PROFESSIONAL!
- PLUS the amazing COURSEMASTER SYSTEM BET. This superb easy to use betting system regularly provides our customers with MAJOR WINS for small stakes - try it and amaze yourself. Will even PRINT OUT YOUR BETTING SLIP for you if you have a printer!
- COMPLETE WITH 20 PAGE BETTING GUIDE AND MANUAL

DISKS AND TAPES £24.95

PERM-MASTER

If you enjoy doing the Pools and regularly use perms as we at INTRASET LTD. recommend then checking your coupon can be a nightmare. Have you won or haven't you? Perm-Master ends the agony by checking your perm for you. Simply tell it which of your coupon numbers are draws and it will do the rest, telling you how many winning lines you have. Perm-Master comes complete with several of the top perms already built in, but if your favourite perm is not there then simply create your own using the unique perm editor.

- Fast and simple to use
- Unique PERM EDITOR
- Create your own perm using the inbuilt perm calculator, test your own theories etc.
- For most block and single line perms

Price £19.95

SPOT-THE-BALL

For all SPOT-THE-BALL fans this programme is a must, no more tiresome counting of 'x's or messy rubber stamps. Use your computer to do your SPOT-THE-BALL coupon.
Just tell your computer where you think the ball is using the screen template supplied.
Will print out up to 540 micro-fine crosses in your chosen shape, or simply tell it to choose at random.
Learns as it goes - tell it where the ball is every week and build up a database of results to use in SPOT-THE-BALL's sequence predictor option.
Works with any Epson compatible dot matrix printer or build your own printer driver using the on screen option.

- LET SPOT-THE-BALL fill in YOUR COUPON this week

SPOT-THE-BALL £17.95

P.C. PATIENCE

- Four addictive P.C. card games to test your skill and luck.
- P.C. PAIRS, THE INTRASET CASINO, P.C. GOLF & CHESS PATIENCE
- Ideal relaxation whilst the boss is not looking, but don't blame us if you get totally addicted, (But we know you will!)

P.C. PATIENCE £14.95 (IBM/pc compats only with 256K + CGA monitor required)

Spend over £100 and claim this item free!!!

INTEREST FREE CREDIT TERMS

Spend over £80 and spread the cost at no extra charge! (Cheque purchases only). Simply divide your order by 4 and send us four cheques each with your name and address and cheque guarantee card number...Date the first cheque with today's date and post-date each of the other cheques by one month i.e. 1/5/91, 1/6/91 etc. We will then hold each cheque until it is due Sorry not available on hardware items

HOW TO ORDER: CHEQUES, P.O.'S TO: INTRASET LTD (DEPT. NCE)
FREEPOST 10 WOODSIDE AVENUE, CLAYTON-LE-WOODS, CHORLEY, LANCS. PR6 7BR
OR PHONE/FAX AS ABOVE FOR LIGHTNING FAST SERVICE.
WE ACCEPT ALL MAJOR CREDIT/CHARGE CARDS.
SEND SAE FOR FREE SOFTWARE CATALOGUE

CONTENTS

MACINTOSH.....16
CPC.....17
AMIGA.....18
ARCHIMEDES.....24
C64.....25
SPECTRUM.....27
ST.....28
WHOLE WIRED WORLD.....30
TECH TIPS.....32
CIRCUIT CITY.....42
THE PD COLUMN.....44
EXPRESS ON-LINE.....46
CENTREFOLD.....48
PROGRAMMING.....50

SHOPPING EXPRESS

THE VALUE-PACKED GUIDE TO YOUR MACHINE AND MORE

EXPRESS MAIL

Write and tell H F-W what you think about almost anything under the Sun! Reach him at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW.* Sorry, no personal replies, even with an SAE and remember, only SOME letters win a fiver!

With your host Haydn - the man with the fivers to give away

■ Amiga update

Jay Lee's comment about the Amiga and 70Hz displays (*Express* 125) was true ■ the past, but no longer! Regular subscribers to comp.sys.Amiga on Usenet will probably recall an article posted some months back (by Dave Haynie, Commodore Amiga hardware guru and all-round good guy, as I recall) which mentioned that using the Amiga Enhanced Chip Set and the CBM Display Enhancer ('flicker fixer') it was possible to produce a non-interlaced 70Hz display with screen dimensions of about 720x380.

I can't find the posting in my listings, so you'll just have to take my word for it. But based on this, it should also be possible to alter the ECS Productivity mode (max 680x495 non-interlaced) to generate a 70Hz display albeit with some loss of vertical or horizontal resolution, even on machines not fitted with display enhancers.

Warning: if you have an Amiga fitted with the Super Agnus and Super Denise don't try poking previously unused custome chip registers to try to generate the above - you could well wreak havoc with your monitor, possibly permanently.

No doubt other Amiga owners will pick up on Jay's remaining comments...
Mike Froggatt, Tunbridge Wells

Surprisingly enough, Mike, No! You are the only one to fire a salvo back across Jay's bows. But thanks for your detailed information.

H F-W

ONE OF HAYDN'S £5 WINNERS

■ Pirate publishers?

Software houses complain about software piracy, but they do so as if they were so perfect and unstained that they don't deserve what they get.

I'm not a pirate - although I was in my younger days, I no longer have any contact with any pirating groups. But I would like to point out a couple of facts which software houses tend not to mention too often. The two cases I am about to mention concern software houses that are often at the forefront of the 'hang the pirates' syndicate. I know both of these incidences are true, and that they are only the tip of the iceberg, but I am writing about them without the permission of the programmers concerned (both good friends of mine) so any repercussions are to be levelled at me.

The first case concerns a programmer who dedicated most of his teenage years to programming the Commodore 64. After learning how to program in machine code, he set about writing several routines that were the first of their kind. The C64 could handle 8 sprites on screen at once, but this person figured out how to display ■ sprites on screen, each one animated as well as the orginal 8.

OK, I know this is old hat now, but this is going back a few years and no-one had seen it done before. He decided to take the game he had written to a local software house, where they looked ■ it, examined it and returned it to him, saying that the sprite routines were 'OK' but the game needed several changes.

So he went home and spent the next few months beefing up the rest of the game. About two months after his original visit to the software house they brought out a game which just happened to have ■ sprites on screen and the new 'revolutionary' sprite routines were exactly the same as my friend had in his game. Being young and trusting ■ the time, he hadn't taken any copyright precautions and could do nothing about this.

The second example concerns a well-known graphics programmer who ended up being commissioned to do the graphics for a major C64 game which sold nearly half a million units in Europe and nearly as many again in America! What did the programmer get for this game. You wouldn't believe it – a whole £1,000. Yes, a grand for what was one ■ the most popular games ■ its time.
Name and address supplied

Well there's a couple of nasty tales... The first instance does sound like seriously bad news for the programmer concerned – a cautionary tale, indeed, for anyone who comes up with something new ■ whatever walk of life: always take steps to protect your ideas. All you need to do is mail a copy ■ your work ■ yourself recorded delivery, placing the stamp on the back of the envelope so that it acts as ■ seal, covering the join between the flap of the envelope and the back of the envelope.

But the second example you give is not quite so wicked – presumably the programmer ■ question agreed to the fee of £1,000 up front and was happy with it at the time? Sure, a wiser negotiator might have done ■ royalty deal, and the company concerned might, out of the goodness of its heart, have bunged him some more dosh when the game became such a rip-roaring success, but would have been under no moral obligation to do so. It's a case of 'caveat vendor' when you sell your services.

I'm glad that you use neither instance as an excuse to tar the entire software industry with the same brush, and I'm glad that you use neither case as a charter for piracy. Have a fiver for being so sensible.

H F-W

■ Archie PD

In *Express* 123, Andrew Clarke wrote asking about Archimedes PD libraries. Here's a list of the ones I know of:

ACME PDSL, 17 May Avenue, Wollaton, Nottingham NG8 2NE (enclose 22p stamp); APDL, 96 Lanehouse Road, Thornaby, Cleveland TS17 8EA (send an SAE ■ least); Arcaynia, PO Box 1927, Sutton Coldfield B74 3QZ (enclose £1 for disk); ARXE Systems Ltd, PO Box 898, Forest Gate, London E7 9HJ (enclose SAE at least); DVS Public Domain, 10 Ravenhurst Drive, Birmingham B43 7RS (enclose SAE at least); Mr Bee PD, 3 Willoughby Lane, Widmerpool, Notts NG12 5PU (enclose £1 for catalogue); Skyfall PD, PO Box 2220, Birmingham B43 5RZ (enclose A5 SAE or £1 for disk); STWPD, 12 Mornington Road, Radlett, Herts WD7 7BL (send a SAE at least); The Datafile PD, 22 Duxford Drive, Aldergrove, Co Antrim, Northern Ireland BT26 (send £1 for disk).

Finally, another plug for *Eureka Software* would be appreciated – write to me C/o Mrs Doris Butcher, Freeman Hall, The Trinity School, Guys Cliffe Avenue, Leamington Spa, Warwickshire CV32 6NB.
Chris Eason, Leamington Spa

Well, thanks for all that information Chris - that plug for Eureka was a pleasure!

H F-W

■ Poor service

Some time ago I purchased the program *Kind Words II*, which I found very good – easy to understand and use, the manual was simple enough to follow and both the spelling checker and thesaurus were big enough for my needs.

When I bought it, I had an Amiga 500 and used a Star LC10 colour printer. Then I upgraded ■ a HP DeskJet, eagerly set up my new printer, started *Kind Words* ■ and to my dismay found that I could not print out the fonts supplied with the program. I double-checked my printer set-up and found that everything was as it should be, then re-read the manual. There was an item concerning the DeskJet and I quote: 'There are some problems with the DeskJet driver – please call our technical

support to see if a new super driver is available.'

I typed out a request and sent it with a blank disk and return postage to the address given. I waited three weeks without a reply then sent another letter. Still no reply.

What I find most annoying is that companies ask you to buy their wares and to register, which I did, then when you contact them for help you are ignored. OK, the super driver may not have been available, but it would have cost them nothing to advise me of this. This sort of treatment can only encourage people to turn to crime and accept cracked software.

My advice to companies is not to make promises and then fail to honour them – or you can't expect the public to have an respect or honour for you and your products. I'm now going to have to sell *Kind Words II*, which I don't want to do, but without the super driver I can't use the program for the purpose I bought it for. I'll just have to use another word processor that can make use of my printer.
Norman Stone, 64 Sandford Road, Chelmsford, Essex CM2 6DQ

Bad news, eh Norman? But I've taken the liberty of printing your full address in case any of our readers has solved the *Kind Words* II DeskJet problem and would like to get in touch with you.

H F-W

Price conscious

I refer to the current great interest in computer auctions. I regularly attend these and have done for almost three years now. It's true to say that there's a boom in interest in these events with more an more members of the general public attending.

But the vast majority of them must either have money to burn, or they do not buy any computer magazines. I say this, because at one particular auction house a regular entry has been brand new Amiga 500s with mouse, modulator, and operating system software - and nothing else. Bidders have been quite happy to pay £240 for these - but then you have to add VAT and buyers' commission on to this, which bumps the price up to £290 – the old VAT rate of 15 per cent

Comparing this to the discounted price of Amiga 500s in the shops and the fact that you get no bundled software or warranty of any kind, I would hardly call that a bargain, would you? As for items being 'new' I would take that with a pinch of salt. Also, people pay fantastically inflated prices for such things as blank disks – prices that I should think a lot of disk suppliers would be over the moon about if they could get the money that people are prepared to pay out at auction.

I have no axe to grind, and am lucky in that I can repair most faulty items obtained from auction. I just wonder why it is that, in this so-called recession, people are happy to pay a price higher than they could get in the shops?
C Hatton, Dagenham

The trouble with auctions is that the novice can easily get carried away with the atmosphere and the excitement of bidding for a lot. If you have gone along to buy something, it can be very difficult to leave without actually doing so – and a lot of people are prepared to bid higher than common sense dictates.

Wise folks will scour the pages of *Shopping Express* and get a good grasp of the best prices available before going off to an auction, and will only spend money on bargains. Fools will easily be parted with their money – and that has always been a fact of life

H F-W

Amstrad bashed

I read with interest your report on Amstrad's ST basher in *Express* 124, but I think your line of argument is out a bit. The PC4000 will flop for some good reasons:

First, the Amiga and ST have the 16-bit market wrapped up between them.

Second the price you quoted – around £700 – is just too much. Witness the Archimedes 3000 which has a wonderful spec but is just too expensive to compete on an equal basis with either the Commodore or Atari machines in the home market. Are people really going to pay more for less? I don't think so.

Third, the Amstrad machine may be a 286 with VGA but (extra colours aside) I'm afraid the Amiga and even the ST are far better graphics engines. VGA is too slow for the kind of games people expect now.

Unless Amstrad does something clever like add a blitter chip or graphics co-processor, this machine will suffer the same fate as all other 286 machines – jerky sprites, terrible scrolling and poor sound. But it's hard to see how they can add to the basic PC without causing problems with existing software.
Tom Kirby-Green, London

Don't forget that there's an increasing amount of hot games software arriving on the PC first these days; and when the CPC range was launched, 'anyone with an ounce of sense' would have seen that Commodore and Sinclair has the market sewn up with the C64 and Spectrum, and just look what happened!

H-F-W

Pirate hype?

I am quite sceptical at the news value of the Psygnosis *Lemmings* piece in *Express* 121. While Psygnosis is justifiably dismayed at the appearance of the game on pirate Bulletin Boards within two days of release, this, unfortunately, is the rule not the exception in pirate activity. I'm sure they know this. The press release presented it as an unusual event, and in effect, played down the extent of pirate activity.

Are software companies and magazines reluctant to publicise the actual extent of piracy – ie 99 per cent of software cracked and transmitted across the world within one or two days of release – the same way that people are reluctant to have children taught about sex, drugs, AIDS and so on, for fear of encouraging them?
Mark Powell, Bristol

Interesting point – but one that falls down when you take a look at it. We have covered the subject of piracy in some considerable depth in *Express*. The problem is, it's impossible to audit the effect that piracy has on sales or to set an accurate figure on how many copies of a game are pirated.

Some software houses reckon that as many as 25 pirate copies exist for each legitimate copy sold, and they may well be right. Some companies are actively considering winding down their 16-bit development programs in favour of consoles. Cartridges will never be pirated with the ease and speed that disk games can be pirated – but the story in *Express* 126 about professional cartridge forgers reveals that consoles are the ideal solution to the problem.

One day, people may just stop going to all the bother of producing original software – if they are doing is placing high-quality work in the public domain. And that would be a very sad day indeed.

H F-W

Musical poser solved by Crash

ONE OF HAYDN'S £5 WINNERS

I recognise the two men in the pictures. The one on the left is Sean Masterson and the other one is Graeme Kidd.
Lee Theasby, Hartlepool

Only half right - but have a fiver H F-W

The one on the left is Garth 'Boy' Sumpter and the other is Graeme Kidd. The pics first appeared in Crash Christmas Special in 1985. I've sent you a copy of what was perhaps the most interesting pic of all...
Kenny Anderson, Dunfermline

Two fivers for you. Let's have some more amusing snaps folks... H F-W

• Kevin Cox desperately seeking a phone box.

MAIL SHORTS

Scooby Doo query

Interesting to see that HiTec are due to release a Scooby game (*Express* 126) – but didn't Elite systems have one in the pipeline years ago?
Martin Faulk, Hainault

It certainly did, and a very ambitious project it was too – it would have ended up more like a Cinemaware game than anything else around at the time. It proved too ambitious though; a completely different version of the game was released and Gargoyle of Dudley did all the work.

H F-W

Religious relation?

Is Steve Carey, now the publisher of *ST Format* but the one-time outspoken critic of Atari and almost everything Amiga any relation to the new Archbishop of Canterbury? I think we should be told...
Alan Dunsmore, Pershore

Apparently not. But he could very easily have ended up as a Cardinal (like an Archbishop, but the other flavour). For the full story, you'll have to wait for the book *'I was a Seminary Boy Until I Discovered the ST'* which Steve is rumoured to be writing.

H F-W

Demo fan

I often purchase several magazines each month, and most of them have a disk on the cover. I think that the playable demos of games they contain are of tremendous benefit to software purchasers, more so than any static advertisement. The only problem lies in the fact that if pre-launch demos become commonplace, then software houses which didn't release product demos might lose out to those which did, because people might think that if a product didn't have a demo then it wouldn't be worth buying.
Duncan Richardson, Stoke-on-Trent

An artificial danger, methinks Duncan. I'm all for the 'try before you buy' opportunities that demos can offer – ever tried getting a go on a game in the shop before you buy it? At least when it comes to buying records, you can hear them on radio first.

H F-W

Wants to be first

Can I just be the first to say 'Happy Easter' to all my friends.
Mike Jensen, London

Idiot. Don't you realise that there is a time delay between writing in and getting your letter in print?

H F-W

VIRUS FREE PD

Amiga Public Domain Software

OVER 1400 PD DISKS AVAILABLE
PD SOFTWARE HELPLINE
THOUSANDS OF SATISFIED CUSTOMERS
OVER 100 DISKS ADDED EVERY MONTH
MOST ORDERS SENT WITHIN 24 HOURS
ALL DISKS DISTRIBUTED VIRUS FREE

BUY ANY TEN PD DISKS AT £2.00 EACH AND PICK ANOTHER 5 FREE!!!

PD STARTER PACK 2
Only £5.00 inc. p&p

Wet Beaver Tennis
RSI Demo Maker
MVK 2.1
5 Cool Demos
Vogue Music Comp

15 PD DISKS = £20.00 inc 5 FREE
ONLY £1.00 FOR EACH SUCCESSIVE DISK EG:

16 PD DISKS = £21.00
17 PD DISKS = £22.00
20 PD DISKS = £25.00

Call for details of discounts on bulk orders

OVER 1400 PD DISKS CATALOGUED.

Official AMOS PD disks now available

AMOS Licenceware £3.50 a disk

DEMO'S.

1365 Porky Pig Anim.
1339 Copper Demo 2
1318 Sys Violation
1307 Major Delight
1306 Evolution 76
1305 Phenomina
1300 Fart & Belch
1297 Cloths Peg
1173 Panic
1180 Disaster
1167 Movie Demo
1172 Enforcements
1185 Thunder Child

AMAZING TUNES 2
20 fantastic tunes
3 disks, 1 meg

ADULT GAMES AVAILABLE OVER 18's ONLY

GAMES

843 Metagalactic Llamas
1064 Lettrix (Great)
1020 Master of Town
1204 Wet Beaver Tennis
849 The Holy Grail
850 Breakout Con Kit
830 Quiz Master
670 Monopoly
595 Cave Runner
1209 Wacko in Wonderland
832 Agatron Games
531 Blizzard
530 Pacman
509 Paradroid
1207 Frantic Freddy
505 Drip
255 Flaschbier
856 Xenon 3 etc.
117 Moria RPG
154 Track Record 1 meg
534 Games disk 1
1179 Chess etc.
1184 Mastermind etc.

BLANK DISKS
Branded 3.5" disks
Only 35p each
With any other purchase

UTILITIES

659 Essential Utils. 1
1206 Mandlebrot Maker
1208 Database Wizard
1078 Essential Utils. 2
1099 Pro Tracker 1.1
1202 RSI Demo Maker
1146 Icon Magic
1151 C-Light
1156 Driver Generator
1368 Speccy Emulator
1310 MVK 2.1

MUSIC

1320 Slabys Music
1317 "19"
1308 Vogue Music Comp.
1303 Imagination
1322 Flashing Bytes
1319 Original Rips 3
1323 Matrix Music 3
1324 Blood Suckers
1327 Triumph Music 11
1333 Amigadeus
1334 The Beatles Hits
1338 Turn Up The Bass
1347 Classix 2
1353 The Best of RAF
1348 Hot Wired
1217 Equamania 2
1181 True Energy

EXCLUSIVE WARE: CROSSED SYSTEM
Mega fast shoot 'em up
silky smooth scrolling
digitized SFX & speech
multiple weapons and more
EXCLUSIVE TO US
ONLY £3.99 inc. p&p
Crossed System is NOT PD

Do the Bart man
A 3 disk version of the No. 1 hit single
Only £3.00 inc. p&p

Master Virus Killer 2.1
Can now detect 124 viruses/bootblocks

RED SECTOR DEMO MAKER AVAILABLE NOW

FOR JUST £1.00 YOU CAN RECEIVE OUR HIGHLY PRAISED CATALOGUE DISK, GIVING DETAILS OF OVER 1000 PUBLIC DOMAIN DISKS. OR ORDER 3 OR MORE OF THE ABOVE AND RECEIVE IT FREE OF CHARGE.

VISA **NOW AVAILABLE: *CLIP ART Vol. 2*. 3 DISKS ONLY £3.00 inc** Access

Catalogue Disk Available at £1.00 sent FREE with all orders

Send Postal Order or Cheques to:
VIRUS FREE PD (Dept NCE)
23 ELBOROUGH RD,
MOREDON, SWINDON,
WILTS, SN2 2LS. ENGLAND
TEL: 0793 512321
FAX: 0793 512075

Minimum order of 3 Disks
All prices include P&P in UK.
OVERSEAS ORDERS welcome
but please send Euro cheque or
Bankers draft with order.
Please add £3.00 towards P&P.

TOP QUALITY PRODUCT
TOP QUALITY SERVICE

BCS

GUARANTEED

Free labels

Bulk buyers 2 for 1 disk guarantee

50 3.5 DS/DD £21.75
100 3.5 DS/DD £36.50
150 3.5 DS/DD £50
200 3.5 DS/DD £64
400 3.5 DS/DD £124
500 3.5 DS/DD £140
Price inc. VAT & p&p

Disks & boxes 2 for 1 disk guarantee

■ disks + 80 cap box:.....£25
100 disks + 80 cap box.....£40
150 disks + 80 cap box....£53.50
200 disks + 2 x 80 boxes £70
400 disks + 4 x 80 boxes ...£137
500 disks + 5 x 80 boxes ...£156
Price inc. VAT & p&p

3½ DS/DD

Posso 150 cap stackable box £15.30

5¼ 50 Cap Box.....£5.10
100 Cap Box...£5.90

100 3.5 DS/HD £61 inc. VAT & p&p

5 DS/DD 21p
5 DS/HD 39p

3½ 40 Cap Box.....£4.10
80 Cap Box.....£4.50

3½ DS/HD 63p

20 Sony branded + box 3½ DS/DD £20

Philips CM8833 MKII Monitor £214

STAR LC-200 Colour Printer £204

STAR LC-24-200 Colour Printer £305

100 5¼ DS/DD + 100 box £28.50 inc. VAT & p&p

Sony bulk 40p

Add £3.65 P&P, add £4.00 for 3 day delivery, add £8.00 2 day, £10.00 next day (from despatch)
Cheques will ■ held for clearance

AMIGAS

Amiga 500 .....£315
Screen Gems 1Mb £373
Class of the 90's.....£521
First Steps.....£521
Cumana drive.....£65
Meg no clock.....£31
Meg + clock £35.50

ACCESSORIES

Mouse mat £2.75
Zipstick £11.50
Jetfighter £12.50
Cheetah 125+.....£8
1000 labels.....£8
Printer lead.....£8.50
Naksha mouse.....£28
Dust cover.....£5.50

ATARIS

Discovery Pack.....£249
For new 520STE bundles call for low prices
Ext drive £72
Dust cover £5

Trade/Government/School orders welcome

Call or send cheques/Postal Orders to
BCS LTD, 349 Ditchling Road, Brighton
E.Sussex BN1 6JJ
Tel 0273 506269 or 0831 279084

VISA

SWITCHBOARD

75 Kirkmuir Drive, Stewarton, Ayrshire, KA3 3HP
Tel: (0560) 85296 Fax: Voice Request

HEWLETT PACKARD
PRINTERS / PLOTTERS

Deskjet 500 £349
3 year warranty

Paintjet £399
Colour Deskjet
1 year warranty

HP 7440A Color-Pro
8-pen Plotter £369
1 year warranty

Prices exclude VAT

ALL MAJOR CREDIT CARDS ACCEPTED

Macintosh

MAC ON-LINE

Virtually every week, the phrase "available from CIX and other bulletin boards" appears in this column when I'm talking about shareware and public domain software. So, this week I thought I'd list my top few Mac-friendly bulletin boards. Armed with these numbers (and a modem) you should have no problems loading yourself with good, cheap software.

• **CIX** – Less a bulletin board, more a conferencing system, CIX is highly popular among modem-owning Mac users. It consists of a vast number of 'conferences', each of which deals with a specific subject. All members are free to contribute to the discussion, and any queries posted are usually provided with helpful answers by other members within a day or two.

The most useful conferences for Mac users are 'mac' and 'macuser'. To join, say, the mac conference, just type 'join mac'. Within the mac conference there ■ a topic called 'files' which contains loads of files available for download. But don't just join the Mac conferences; whatever your interest there's bound to be a conference dedicated to it – if not, you can always start one yourself!

CIX has a minimum charge of about £7.25 per month; on-line costs are between £2 and £3 per hour, depending on whether you use the service at peak times ■ not. For more details, give the helpline a ring on 081-390 8446 or log on to the service ■ data bits, no parity, one stop bit) on 081-390 1244 and sign on with the user name 'new'; this will take you through the registration procedure.

• **Buz Board** – This is a bulletin board which caters for a variety of different machines, but mainly for the IBM-PC, Apple II and Mac. There is a large number ■ files available for download, ranging from games to development tools. The board's phone number is 081-200 9175, and again the protocols are 8,n,1. When you first log on you will be asked for your name, address and phone number. You should be 'validated' within a day or so, after which time you can use the full facilities of the board at no charge.

• **Mouse to Mouse**. This board has been 'off the air' for a few months, but ■ now back up and running. The new phone number ■ 0227 470706, and – again – protocols required are 8,n,1. The board is free to use, and is run by a guy who also has an Apple dealership – so he can offer you discounts on some Mac hardware. The board is dedicated to the Mac only, and is unusual in that it is actually run on a Mac Plus – most bulletin boards run on PCs. As with Buz Board, it will take about a day for you to be 'validated' after you first log on, then you will be able to use all the facilities of the board. (Validation, incidentally, just involves the sysop checking that your name isn't on a blacklist of people who abuse bulletin boards, leaving obscene messages and uploading viruses.)

Once you've logged on to any or all of these services, why not drop me an e-mail message and let me know what you think of the column; on CIX my user name is 'iwrigley', on the other two I'm 'Ian Wrigley'.

And just to round things off, let me give another plug for my favourite modem – the Teleport, from Global Village Communications. It's a 2400baud MNP5 device for the incredibly low price of £179 (plus VAT). It connects to your Mac via the ADB port rather than the modem port, but to all intents and purposes it works just like a normal modem. I use it all the time simply because it's about the best I've come across. It's distributed by Computers Unlimited, and is available by mail order from the company's subsidiary, The Software Club. Call 081 205 4548. Even better, when you buy it from Software Club it will only cost

POSTCARD FROM AMERICA

The Lord High Executioner has a little list, and so have I! It's not filled with the names of foolish software moguls (okay, you caught me. I have that list too), but of computer hardware and software deficiencies. Here is the first of a half dozen complaints I will remedy when I rule the world:

All computers, and computer peripheral devices larger than a hard-bound book must have a handle or two!

Why do the top-notch engineers that design the shells for our techno-toys think we're not going to move them around – especially since we end up dragging them to the repair shop every other month?

I'm always straining my back, and other more delicate portions of my anatomy, lifting monitors, and printers. A couple of built-in handles, like the kind found in the award winning "Compact Macintosh," would give users some physical, and mental stress relief.

Monitors are the worst. They are not only heavy, but cumbersome as well. My Apple colour monitor inflated to a grand piano when I carried it a few blocks. Unfortunately, damage by dropping is not covered under warranty.

I acknowledge that I'm surrounded by people who move their computers frequently. Perhaps more often than the typical Joe/Jane user. Members of BMUG, the Berkeley Mac Users Group, hand carry their own Mac II system around town for their weekly meetings. I cart my system to shows, and into bed when I get the flu. This is real hauling, not just shifting across the room. But everyone needs to shift their machines from time to time, perhaps to get at the cat hair under the hard drive. When I rule – handles!

Small tip: I often have the devil of a time fitting cable plugs into device ports, especially the eight pin mini-circular jobs used on the ImageWriter II. Take out your permanent felt-tip pen, and mark the plug and printer case. I like big black dots. This will not hurt the resale value, and will save you a dose of cable fumbling.

David Morgenstern

£160 plus VAT if you name your usual Apple dealer when you order; you also get the *MicroPhone I.5* comms package free. Now that is, to coin a phrase, an offer you can't refuse.

RUMOURS...

Most ridiculous piece of software of the year award nominations are flooding in to Future Towers already. The leader so far is something called *Negotiator Pro*, from Beacon Expert Systems, Inc, of Brookline, Massachusets. (That's the US of A, in case you hadn't guessed.)

The program asks the user questions, from which it creates "a profile of the user's negotiating style, as well as that of his or her opponent." It analyses those two profiles and helps the user draft a winning negotiating strategy. Apparently, one US attorney who used the PC version ■ the product to negotiate a prison sentence for his client down from seven years to four.

If this sounds like something you're interested in, you're mad. But, if that's the case, phone Beacon on 010 1 617 738 9300 and be prepared to be negotiated into handing over $299.

Latest rumours of the new Mac laptop that Apple and Sony are (probably) developing have appeared in US magazine *MacWeek*. It reports sources as saying that the machine will include a 16MHz 68000 processor, 2Mb of RAM and a 20Mb hard disk – but no floppy drive. For an external floppy, users will probably have to shell out a couple of hundred extra dollars on top of the computer's expected $2,500-or-so price.

Ian Wrigley

PC

TOTAL RECALL

Arnold Schwarzenegger and I have a lot in common. Oh yes. To within the odd pound or so, we both weighed the same when we were born. And we've both got two arms, two legs... oh yes, we've a lot in common. Of course, he went on to become a multi-millionaire film star with a physique like the side of a house, whereas I've gone on to edit *Amstrad Action* and develop the physique of a malnourished potato, but, well, c'mon, he's still got time to make something of himself...

But then, he's been to Mars, and I haven't. Or ■ least, he has in *Total Recall*. Have you seen the film? Well, it's memorable in one way, at least. And it's not the plot – which is reminiscent of pulp sci-fi from about forty years ago. No, the best bit is the way the characters' faces swell up when they are exposed to the ultra-thin Martian atmosphere. Their eyes ■ all goggly and their faces turn a funny purple; they grab their throats, their tongues come out and their heads expand like a balloon and... dammit, you don't get to see the ultra-gory bit you've been on the edge of your cinema seat for. (I sometimes wonder if I need help.)

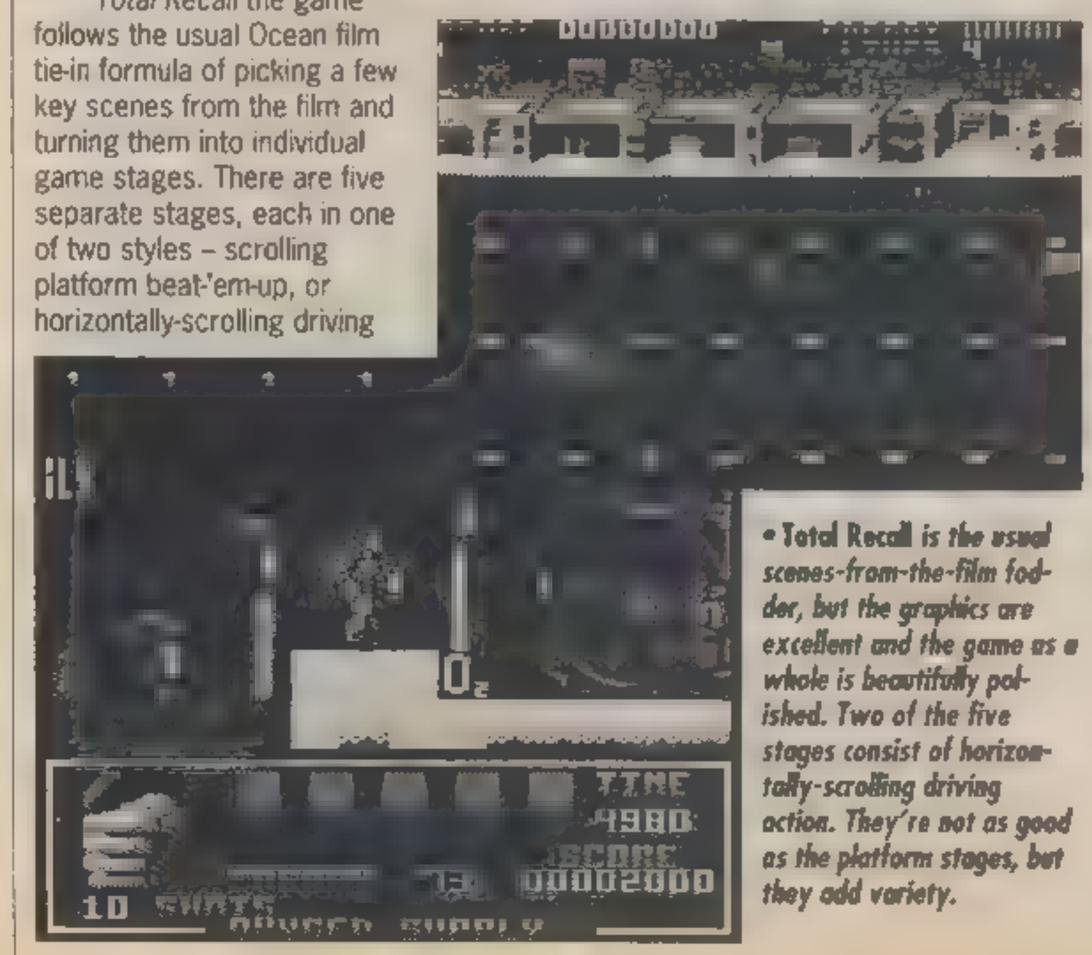
Total Recall the game follows the usual Ocean film tie-in formula of picking a few key scenes from the film and turning them into individual game stages. There are five separate stages, each in one of two styles – scrolling platform beat-'em-up, or horizontally-scrolling driving stages. They all loosely follow the plot of the film... and beyond that, there's really not a lot to say.

Nothing about the game is exactly mould-breaking, but Ocean has yet again succeeded in turning out a beautifully polished and well-executed film licence. The soundtrack is good, consisting of decent spot effects during the action and a rather good title tune, but it's the graphics which really steal the show. Your Arnie sprite in the beat-'em-up stages is big, hard and well-animated (but does Arnie really sport the jet-black sideburns of a ■ porter?).

The game is tough but eminently playable. There isn't a huge variety of game styles, but what there is is so well done it would be churlish to criticise it. A definite must for all Arnie and film licence fans.

ARNOR IS BACK!

Biggest news this week has to be the fact that Arnor is getting back into CPC software. It's true – the originator of the fabulous *Protext* word processor, after a break of a couple of years in which we all thought it had lost interest in the Amstrad range, has come up with a new addition to the *Protext* family.



• Total Recall is the usual scenes-from-the-film fodder, but the graphics are excellent and the game as a whole is beautifully polished. Two of the five stages consist of horizontally-scrolling driving action. They're not as good as the platform stages, but they add variety.

dataplex

ACCESS VISA

DATAPLEX COMPUTERS LTD.

129 Bath Road, Slough, Berkshire, SL1 3UW
Tel: 0753 35557

19 High Street Swindon, Wiltshire
Tel: 0793 488448

SHOWROOM open: Mon - Fri 9.30 - 5.30 Saturday 9.30 - 4.30
MAILORDER Consumables £1.50 Hardware £8.00 Prices excluding VAT

AMIGA A500 HARDWARE

Amiga A500 Screen Gems + 1 Meg Pack £309
Amiga A500 Screen Gems Pack + free disks + 10 extra games pack.....£345
Amiga A500 1 Meg Class of 90's ..£459
Amiga A500 1 Meg Class of 90's (First Steps) £459
Amiga A1500 Computer £549
Amiga A1500 + 1084S monitor £759
Amiga A1500 + Philips CM8833 MKII .£725

SPECIAL OFFER

Amiga A500, 512K, Flight of Fantasy Pack... £279.00

While stocks last

Amiga A500 + TV Mod + Mouse + system disk + manuals .....only £269

ATARI COMPUTERS

Atari 520STFM discovery pack includes 4 games £240
Atari 520 STE Turbo Pack include■ basic STOS and 7 games + Joystick.....£310
Atari 1040 STE extra pack includes ST Words, ST Calc, ST Basic, ST Graphics, Hyper-Paint, STOS, 1st Basic, Print Game.....£399

AMIGA/ATARI DRIVES

1 Meg 3.5" internal £49
1 Meg 3.5" external £60
1 Meg 5.25" external £90

ACCESSORIES

512K Ram + clock £39
Joystick.....£10
10 Blank disks in library box.....£8
Mouse Mat.....£3
Amiga/Atari Mouse £29

MONITORS

Philips CM8833 MK II Colour Monitor + FREE Lead.....£189
Commodore 1084S £199
SM 124 (Atari) £99

PRINTERS

Star LC10 Mono £129
Star LC200 Colour (9 pin) £180
Star LC24 200 (24 pin) £210
Star LC24 200 Colour.....£245
Star LC24/10 .....£175
Panasonic KXP1124i + lead £239
Panasonic KXP 1123.....£180
Panasonic KXP1624 .....£329
Citizen 120D +.....£120
Citizen Swift 24 + Colour Upgrade £25■
Citizen Swift 9 + Colour Upgrade ..£185
Epson LX400.....£126
Epson LQ400 (24 pin) £199

LASER/INKJET PRINTERS

PLEASE CALL FOR PRICES

THE WORLD'S FINEST DISKS!

AND NOW YOU CAN ORDER DISKS IN ANY COMBINATION YOU WANT!

(You can order 27 green and 72 yellow and 1 orange!)

GENUINE KAO DISKS!

THE WORLD'S FINEST!

AVAILABLE IN BLACK, BLUE, YELLOW, FOG WHITE, GREEN, RED AND ORANGE!

25 Genuine KAO 3.5" DSDD disks .....for only £13.99
50 Genuine KAO 3.5" DSDD disks .....for only £22.99
100 Genuine KAO 3.5" DSDD disks .....for only £44.99
200 Genuine KAO 3.5" DSDD disks ..... for only £79.99
300 Genuine KAO 3.5" DSDD disks .....for only £119.99
400 Genuine KAO 3.5" DSDD disks.....for only £159.99
800 Genuine KAO 3.5" DSDD disks.....for only £299.99
2000 Genuine KAO 3.5" DSDD disks.....for only £679.99

Offers subject to availability

SO HURRY

Is ■ worth risking it with cheap disks from manufacturers you've never even heard of (or ever will!) when you can buy the WORLD'S FINEST at these prices?!!

THESE DISKS ARE THE REAL THING! THESE ARE GENUINE 100% KAO, 100% CERTIFIED, 100% GUARANTEED FOR LIFE!

Post and packing included.
All disks are guaranteed for life with a 1 for 1 swap.
All disks come individually wrapped with labels.
Unconditional money back guarantee!
This does not affect your statutory rights.

Cheques/postal orders payable to:

PIONEER MEDIA, COMMUNICATIONS HOUSE, 26 BRITON CRESCENT, SANDERSTEAD, SURREY, CR2 0JF.

STRICTLY MAIL ORDER. DISKS NOT KEPT AT THIS ADDRESS

Trade Enquiries welcome

ONCE BYTTEN
39 Marling Way,
Gravesend, Kent,
DA12 4DW
Tel 0474 567964
Fax 0474 537172

VISA

Access

AT-PCs with Hard Drive & VGA Monitor £599

These SafeDATA systems comprise of: Desktop case with Digital display of speed, 1Mb of Zero Wait State RAM, AMI BIOS, 5.25" 1.2Mb or 3.5" 1.44Mb Disk drive as standard, 44Mb 28ms Seagate Hard Drive, 2 serial & 1 parallel port, IDE controller for 2 Hard and 2 Floppy Drives, 102 key enhanced keyboard, Graphics card & Monitor.

Hard Drive Systems	VGA Mono	VGA Colour	S/VGA Colour
286-12Mhz	£599	£699	£799
286-20Mhz	£699	£799	£899
386SX 16Mhz	£799	£899	£999
386SX 20Mhz	£899	£999	£1099
386-33MHz (32k cache)	£999	£1099	£1199
486-25Mhz	£1799	£1899	£1999

OPTIONS.
Extra Floppy Drive £49, 124Mb 19ms Seagate Hard Drive add £199,
Extra RAM (per 1Mb) £49, Mini Tower Case add £35, Tower Case add £49,
MS-DOS 4.01 £49.

All prices include fitting and pre-delivery testing
Many other combinations available, many other options
all built to very high standards.

ALL PRICES EXCLUDE VAT AND DELIVERY -
PLEASE RING OR WRITE FOR A QUOTE

STOP PRESS!! We now accept American Express Cards for all purchases

WE MUST BE MAD

Due to massive bulk buying and low cost advertising we can offer you high quality European manufactured disks at these extremely low prices

3.5" DSDD DISKS 31p INC VAT + LABELS

250 + @29p each, 500 + @ 28p each, 1000 + @ 27p each
ALL DISKS CERTIFIED 100% ERROR FREE

SONY 3.5" DSDD BULK 38p

3.5" DSHD — 65p
5.25" DSDD — 19p
5.25" DSHD — 36p

100 Capacity Disc Box	3.75	50 Capacity Disk Box	1.25
Mouse Pockets	1.50	Mouse Mat	1.75
Printer Stand	3.75	Amiga Dust Cover	2.50
Posso Box	15.00	Atari Dust Cover	2.50
Amiga 512K RAM Expansion with clock			12.00
Amiga/Atari External Drive			59.95

THIS MONTHS 200 3.5" DSDD DISKS
SPECIAL OFFER + 2 x 100 CAP BOXES 64.95

Please add £2.85 p&p/next day £7.50. Cheques/POs to
PLC COMPUTER SUPPLIES (Dept NCE)
11 Meakin Avenue, Clayton
Newcastle, Staffs ST5 4EY.

TELESALES HOTLINE
0782 212970

Access VISA

Called *Protype*, it's a "print enhancer" which is designed to work alongside *Protext* and its add-on modules and can be used with any Epson-compatible printer. Although designed as part of the *Protext* family, however, it can be used with other programs, even BASIC.

Protype's specifications are as follows:

- Seven fonts with subscript, superscript, underline, box, encircle, mirror imaging
- Right justified proportional printing with any combination of fonts and kerning
- Tabulated proportional text
- Line graphics
- ■ extra characters on-screen including accented letters, accent keys defined
- Multiple accents on any letter

I can't wait to get my hands on a reviewable copy, and according to Amor the program should become available towards the end of April. Price will be £30.

SD'S "SPRING OFFENSIVE"

While Amor has surprised everyone with its return to the CPC field, SD Microsystems, champion of serious software for the CPC, is launching a "spring offensive" with five new programs. These include *Picture Disk*, which contains some 400 pieces of clip-art converted from the American public domain, *Home Finance*, *DiscBase* ("The only fast disk-file organiser for CPC machines."), *Graph-Master* ("a specialist package for creating ten different types of graph") and a special free disk utility ("the usual list/run/print/erase commands but all on single-key presses and with a useful un-erase option") given away with each order.

SD Microsystems programs cost in in the region of £12-15, and represent good value. For more details (and information on some of the other bargains on offer), write to: SD Microsystems, P.O. Box 24, Hitchin, Herts SG4 0AE, or call 0462 422897.

CARTRIDGE COMPLAINTS

Barry Marsden, of Slough, is fed up. And so, for that matter, am I:

"I am not only finding difficulty in obtaining cartridges (the only outlet seems to be Dixons) but also ■ getting games on disk. My local computer shop announced that they are no longer stocking Amstrad disks, and that the larger retailers, like W H Smith and Boots do not seem to want to know about them either.

"It begins to look like a conspiracy on the part of Amiga/ST stockists to run down Amstrad, in favour of the more expensive (and more profitable?) 16-bit machines and games. My son is thoroughly disenchanted with Amstrad now, having saved up for some considerable time to buy a 6128 Plus, and ■ beginning to wish he had bought an Atari ST, despite the fact that he would then be unable to play all the games he has collected for his 464 over the years. Am I imagining things, or is there perhaps a case for suggesting that the Monopolies Commission should investigate!

"Certainly it is up to us Amstrad users to keep on at the retailers until they get the message that there is most definitely a market for Amstrad games on disk, and if they don't realise it then they will lose out. They may not understand the advantages of Amstrad machines over the 16-bit brigade, but they will understand Profit (with a capital P). So get out there and get agitating, all you Amstrad users!"

Well, first of all, Barry, may I say that if you've succeeded in buying cartridges from Dixons, you've done better than I have! I asked in our local branch, and was told rather disinterestedly that they didn't stock them, and I should look elsewhere.

It's interesting that you say your son ■ disenchanted with Amstrad not because of the hardware compared to that of 16-bit machines, but instead because of the poor software availability. Whether or not the availability ■ disk-based software ■ becoming a major problem, the availability (or lack of it) of cartridge games is a problem already.

Someone, somewhere, has bungled badly, and despite Amstrad's promises of last year (12 titles available by Christmas 1990), cartridge availability ■ still minimal in most areas. Amstrad is adopting its now characteristically aloof attitude and insisting the problem the publishers' alone now – but what happened to the much-vaunted co-operation between Amstrad and the publishers, the co-operation which led to the specifications and design ■ the new Amstrads in the first place?

Amstrad would have to be naive indeed to imagine that the job was done once the machines were in the shops. Of course not! You need to establish a large, and growing, user base to make a new machine successful, and you can only do this by ensuring continuing dealer and publisher support. Unfortunately, there seems very little evidence of either.

Sorry to sound so gloomy, Barry, but it gets me annoyed. The Amstrad Plus machines and GX4000 console are excellent products at a good price. But if they succeed in the years to come, I now suspect it will be despite Amstrad and not because of it.

Rod Lawton

Amiga

MICROSYSTEMS SLASH PRICES

Those of you looking to use your Amigas for a little bit more than the usual alien-wasting action will be pleased to learn that US-based MicroSystems Software has substantially cut the prices on many of its Amiga applications software.

If you're looking for a powerful word processor with just about every bell and whistle imaginable, then MicroSystems' *Excellence! 2.0* is the package for you. The previous release of this powerful package would have set you back over £200, but in a fit of generosity MicroSystems has slashed

the price to just £117. If you read my mini-review two weeks ago in *Express*, then you'll already know my opinions of this package. Put simply, *Excellence! 2.0* is the best thing since the invention of the toasted sandwich maker.

Excellence! 2.0 boasts powerful indexing features, immense spell checking and thesaurus facilities, plus full support for multiple fonts, IFF graphics and even printing to PostScript-compatible devices.

MicroSystems has also slashed the price of its integrated package, *Platinum Works*. The package, which comprises of comms, database, spreadsheet and word processing modules, is now available for just £90, making it one hell of a bargain. If you're after a complete one stop solution, then *Platinum Works* is the answer. Indeed, it's so good that Commodore now bundles it with the Amiga 1500 PHC, which probably goes some way ■ explaining why the price has been dropped so substantially (it was previously sold for £199).

If you feel that you don't really need the databasing, spreadsheet and comms modules of *Platinum Works*, then the company's *Platinum Scribble!* is still available. It's not quite in the same league as a package like *Excellence!*, but then it is almost £70 cheaper. None the less, it has both spell checker and thesaurus facilities for just £50.

All three of these packages (and more) are available from MicroSystems' UK distributor, HB Marketing. Give them a bell on 0753 686000.

MUSIC FOR THE MASSES

As reported in last week's *Express*, Teijo Kinnunen has released a major upgrade to his acclaimed PD music creator MED (available from Amiga Nuts United on 0703 785680).

Version 3.0 boasts many enhancements over previous releases, including the following:

Sample editor Now you can fine tune your samples with MED's built-in sample editor. Chunks of sample can be cut, copied and pasted, sections filter and even entirely new samples grabbed when the necessary hardware is connected to the parallel port of your Amiga. Now there's no need to edit your instruments in a separate sample editor such as AudioMaster.

Synth sound editor For all you acid freaks, Med 3.0 now has a powerful analog synth sound editor which attempts to emulate the workings of the infamous SID chip which is to be found within Commodore's 8-bit Amiga, the C64. Now you can create all those sweepy analog synth sounds that seem to be so trendy these days.

Hybrid sounds Not content with synth sounds, you can also use Amiga samples as your raw materials and shape them using MED's powerful analog synth editing tools. Roland and Korg have been doing it for years, ■ why shouldn't the Amiga!

MIDI support MIDI support has been enhanced beyond recognition. This new release boasts extensive MIDI synchronisation options which allow MED to both control and be controlled by MIDI compatible devices. MED will also now take notice of MIDI 'key-up' messages, which allows you to define the duration of a note. Other MIDI enhancements include MIDI reset and support for MIDI pitchbend and modulation.

Chords Bit rusty when it comes to entering chords? If so, then let MED do the hard work for you with its automatic chord entering system. All you need do is press a single key and MED will generate the chord for that note. Sounds too good to be true, doesn't it!

2.0 Compatible Yep, A3000 users can also get in on the act now that MED has been fixed to work under *Kickstart 2.0*.

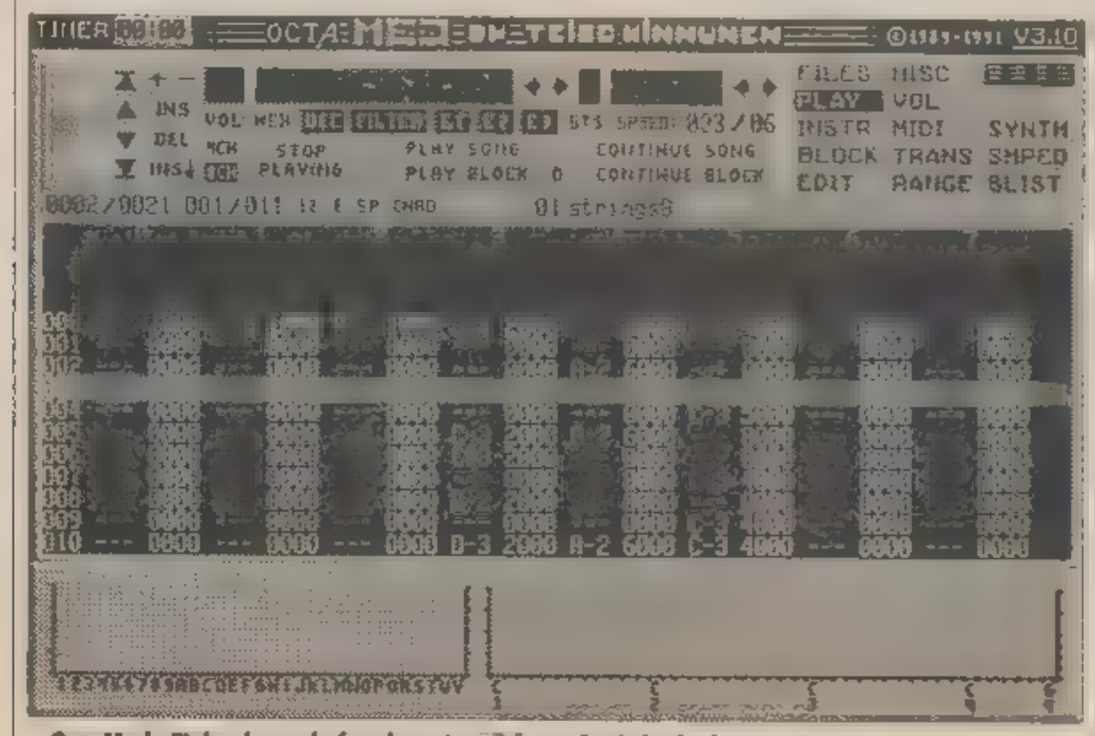
OCTOMED PREVIEW

On the subject of MED, here's an exclusive sneak preview of Teijo's soon to be released *OctoMed* system. The program's still very much in development, but you can probably already see that Teijo has cleaned up the user interface substantially. The new program now runs ■ Medium resolution, so many of the gadgets are much better defined.

Cosmetic considerations aside, by far the major new feature of *OctoMed* is the fact that it can handle up to eight sounds at once . Don't worry, there's no extra hardware to buy – the standard Amiga sound chip is pushed to its very limits to allow each channel ■ play two samples simultaneously.

Sounds good so far, but the best news ■ the price of *OctaMed*. Teijo had previously intended to pitch the product at about the £50 mark, but this price has been slashed to an unbelievable £10. According to Teijo this decision was taken to allow as many Amiga users as possible to buy *OctaMed*.

Anyway, that's about all there is to say about *OctoMed* for the moment, but I'll bring you more as soon as I hear it. In the meantime, contact AmigaNuts United on 0703 785680.



• OctoMed: *Eight channels for the price ■ four. Can't be bad, matey!*

HIGH QUALITY DISKETTES

PIN NUMBERED QUALITY DISKETTES 100% CERTIFIED AND GUARANTEED 100% ERROR FREE, MANUFACTURED AND QUALITY ASSURED BY AN INTERNATIONAL BRAND NAME

3 1/2 DS DD 34p EACH

RED, WHITE, BLACK, YELLOW, ORANGE, GREEN

ORDERS OVER 100 RING FOR PRICE

3 1/2 DS DD 31p EACH

3 1/2 DS HD 60p

5 1/4 DS DD 20p

5 1/4 DS DD COLOURED 25p

5 1/4 DS HD 37p

3 1/2 PLASTIC LIBRARY 5 1/4 CASES 78p EA

STORAGE BOXES

31/2 40 cap ...£3.70 31/2 80 cap .. £4.10

51/4 50 cap ...£3.90 51/4 100 cap £4.30

EURODATA
12A QUAKERS YARD
ADAM AND EVE ST
MARKET
HARBOROUGH
LEIC LE16 7LT
TEL: 0858 433992

RING FOR MEMOREX BRANDED PRICES

LIFETIME GUARANTEE . ALL PRICES INCLUDE LABELS & ENVELOPES. ALL PRICES EXCLUDE VAT.
ORDER NOW WITH POSTAL ORDER OR CHEQUE MADE PAYABLE TO EURODATA, OR TELEPHONE YOUR ORDER USING MASTERCARD & VISA. SUBJECT TO AVAILABILITY
ADD £3.20 P&P

Access VISA

LOWEST PRICES FOR HIGHEST QUALITY

£1000 REWARD

FOR INFORMATION LEADING TO A PROSECUTION & CONVICTION

THIS CAMPAIGN IS ORGANISED BY ELSPA

ANY INFORMATION ON PIRACY SHOULD BE PASSED TO F.A.S.T. (THE FEDERATION AGAINST SOFTWARE THEFT)

TELEPHONE 0386 833501

PIRACY IS THEFT

PRINTER RIBBONS

All of our ribbons are GENUINE manufacturer ribbons - NO copies!

1 x LC10 Black Ribbon	£3.50
5 x LC10 Black Ribbons	£16.95
1 x LC10 Colour Ribbon	£5.20
5 x LC10 Colour Ribbons	£24.95
1 x LC24/10 Ribbon	£4.75
5 x LC24/10 Ribbons	£22.00
1 x LC200 Colour Ribbon	£10.00
5 x LC200 Colour Ribbons	£50.00
1 x LC24-200 Mono Long Life	£7.50
5 x LC24-200 Mono Long Life	£37.50
1 x LC24-200 Colour Ribbon	£11.00
5 x LC24-200 Colour Ribbons	£55.00
Swift 24 Mono Ribbons (each)	£5.00
Swift 24 Colour Ribbons (each)	£13.95

ATARI LYNX

Lynx Games Machine - (with California Games)	£117.50
Lynx Games Machine - (no free software)	£95.00
Lynx Carry Case	£14.99
Lynx Sun Visor	£6.99
Lynx Car Adaptor	£9.50
Blue Lightning	£19.99
Chips Challenge	£20.50
Electrocop	£19.99
Gates of Zendocon	£19.99
Xenophobe	£19.99
Robo Squash	£21.00
Road Blasters	£19.99
Rampage	£21.00
Ms Pacman	£19.99
Shanghai	£19.99
Zarlor Mercenary	£21.00
Gauntlet 3	£23.00
Rygar	£21.00
Slime World	£19.99
Klax	£19.99
Paperboy	£20.50

ATARI ST / AMIGA STEREO COLOUR MONITOR

The Philips 8833 MkII is the perfect colour monitor for all ST and Amiga owners. With its high quality picture and stereo sound it really makes the STE or Amiga perform to it's full.

12 months on-site warranty FREE!

£ 249.99

including vat and delivery

Supplied with 1 cable free of charge. Options are :-
Atari STE Stereo cable or Atari STFM cable or Amiga stereo cable

PRINTERS

All of our printers come with a parallel cable to suit Atari ST, Amiga and all standard PC etc (other cables available at extra cost - ask for details). All printers carry a full 12 months warranty. We only sell genuine UK stock - we do not offer inferior "grey imports".

Star

FREE CABLE WITH ALL PRINTERS

Star LC10 Mono (9-pin)	£155.00
Star LC200 Colour (9-pin)	£225.00
Star LC24-10 Mono (24-pin)	£215.00
Star LC24-15 Mono 15" (24-pin)	£399.00
Star LC24-200 Mono (24-pin)	£265.00
Star LC24-200 Colour (24-pin)	£295.00
Star XB24-10 Mono (24-pin)	£479.00
Star XB24-15 Mono 15" (24-pin)	£609.00

Panasonic

Panasonic KXP1624 15" (24-pin)	£389.00
Hewlett Packard Deskjet 500	£469.00
Citizen 124D (24-pin)	£235.00
Citizen Swift 24 (24-pin)	£299.00
Canon BJ10E Portable Bubble Jet	£349.00

PRINTER ACCESSORIES

Swift 24 Colour Kit	£34.99	Deskjet - FX85 Mod	£59.99
Star XB Colour Kit	£34.99	Deskjet - Ink Cart	£14.99

ATARI ST ACCESSORIES

SM124 Mono Monitor	£99.99
Megafile 30 Hard Disk	£399.00
Megafile 60 Hard Disk	£529.95
Roctec 1MB External Drive	£69.00
Golden Image Handy Scanner	£199.00
Forget-Me-Clock II Card	£19.95
ST Monitor Switch Box	£14.95
STE Stereo scart lead	£12.99
STFM standard scart lead	£12.99
STE MKII 8833 lead	£12.99
STFM MKII 8833 lead	£12.99
Joystick/Mouse extension lead	£4.99
Replacement Mouse lead	£3.95
Standard Parallel Lead	£5.95
Mouse Mat	£3.50
2 x coiled Midi leads	£6.99
14 Pin Din Plug (ST disk drive)	£2.30
14 Pin Din Socket (ST disk drive)	£3.00
13 Pin Din Plug (ST monitor)	£2.00

ST MIDI SOFTWARE

Sequencer One (ST)	£69.00
Dr.T Tiger Cub (ST)	£64.99
C-Lab Notator V3.0	RI.NG
C-Lab Notator Alpha V1.0	RI.NG
C-Lab Creator V3.0	RI.NG
C-Lab Aura ★NEW★	RI.NG
Steinberg Cubase V2.0	RI.NG
Steinberg Cubeat ★LOW PRICE★	RI.NG
Steinberg Voice Editors	RI.NG

Notator Steinberg C-LAB SOFTWARE

ST SOFTWARE PACKS

DISCOVERY SOFTWARE £17.50
Contents : STOS, First Basic, NeoChrome 4 games

TURBO SOFTWARE (STE ONLY) £24.99
Contents : STOS, First Basic, Hyper Paint II, Music Maker 8 games

TENSTAR PACK SOFTWARE £29.95
Contents : Asterix, Chess Player 2150, Driving Force, Live Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek Trivial Pursuit II

EXTRA PACK SOFTWARE £39.95
Contents : K-Word, K-Spread, K-Data, K-Graph, Basic, STAC and Prince

ACCESSORIES ...

CONTRIVER 5 in 1 MOUSE

The 5 in 1 mouse compatible with the Atari ST, Amiga A500, Amstrad PC, Schnieder PC and Commodore PCIII. Also includes a mouse mat and a mouse house.

£21.00

DISK DRIVE CLEANING KITS

3.5" – £3.75
5.25" – £3.75

DUST COVERS

High quality tailored dust covers.
Available for :
Atari ST : £6.99 each
Amiga A500 : £6.99 each
LC10 printer : £4.99 each
SM124 monitor : £7.99 each
Philips 8833 : £7.99 each

BLANK DISKS

All of our blank disks are guaranteed and supplied with labels. Our 3.5" unbranded disks are of the highest quality double sided media. All Sony Branded disks are boxed and supplied with labels. All disk prices include vat and delivery. Ring for prices on larger quantities.

QUANTITY	10	20	30	50	100
UNBRANDED 3.5" DS/DD	5.99	10.99	15.99	25.99	44.99
SONY BRANDED 3.5" 2DD	9.50	18.50	26.50	42.50	80.50
UNBRANDED 3.5" HD	14.95	27.95	39.95	59.95	114.95
SONY BRANDED 3.5" HDD	26.50	50.50	74.50	115.50	227.50
UNBRANDED 5.25" 360K	3.25	6.25	9.25	14.95	28.25
SONY BRANDED 5.25" 2D	7.95	14.95	21.95	34.95	68.95
SONY BRANDED 5.25" HDD	12.99	23.99	34.99	54.99	99.99

MOUSE MATS

High quality neoprene soft mouse mats.

£ 3.50

PRINTER STANDS

2 piece plastic printer stand with paper space underneath. (fits virtually any printer)

£9.95

DISK BOXES

3.5" 40 cap £4.95
3.5" 80 cap £7.95
5.25" 50 cap £6.95
5.25" 100 ca £9.95

MONITOR PLYNTH

Are you running out of desk space? Then we have the ideal desk space saver!! The monitor plynth is a high quality, fully painted, metal unit on which will house either an Atari ST or Amiga A500 underneath, while having your TV/monitor standing on top.

£24.99

AMIGA ACCESSORIES

512K Ram Upgrade + clock	£29.99
A590 20Mb Hard Disk drive	£284.95
Stereo Hi Fi Speakers	£37.50
Astra Pack software	£29.95
Roctec external disk drive	£65.00
Golden Image Handy Scanner	£199.00
Amiga Stereo Scart Lead	£12.99
Amiga Stereo Lead MkII 8833	£12.99
VIDI Amiga Video Digitiser	£99.99
Master Sound 1	£36.95

AMIGA 1500 SOFTWARE PACK

FOR A LIMITED PERIOD WE ARE OFFERING THE A1500 SOFTWARE PACK :-

Platinum Works, Deluxe Paint 3, Populous, Sim City, Battle Chess and Their Finest Hour

ALL FOR ONLY

£ 89.95

Atari Portfolio

Atari Portfolio Pocket PC	£169.00
Portfolio 128K Memory Card	£119.99
Portfolio 64K Memory Card	£84.95
Portfolio 32K Memory Card	£44.99
Portfolio Mains Power Adaptor	£11.99
Portfolio Parallel Interface	£38.00
Portfolio Serial Interface	£54.95
Portfolio Super Memory Expander	£165.00
Portfolio Card Drive	£59.99
Finance Card software	£44.99
Utilities Card software	£44.99
PC Application software	£44.99

ATARI ST PACKS

ALL ATARI ST PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES. ALL OF OUR STE COMPUTERS HAVE THE "PLUG-IN" RAM SOCKETS AND DO NOT REQUIRE A SOLDERED RAM UPGRADE. ALL OF OUR STE COMPUTERS ALSO HAVE THE NEW DMA CHIP SET ALLOWING TROUBLE FREE OPERATION WITH ATARI HARD DISK DRIVES.

	512k	1mb	2mb	4mb
ATARI STE STANDARD PACK. consists of the computer with mouse, tv lead, manual and all connecting leads etc. The Standard Pack is supplied with NO software.	£299.00	£329.00	£359.00	£439.00
ATARI STE DISCOVERY. consists of the Standard Pack and STOS, First Basic, NeoChrome and 4 games (Carrier Command, Space Harrier, Outrun, Bomb Jack)	£309.00	£339.00	£369.00	£449.00
ATARI STE TURBO. consists of Standard Pack and STOS, Basic, Hyper Paint II, Music Maker II, 8 games (Indiana Jones, Impossible Mission II, H.K.M, Super Cycle, Outrun, Dragons Breath, Anarchy & Blood Money)	£319.00	£349.00	£379.00	£459.00
ATARI STE TENSTAR. consists of Standard Pack and Asterix, Chess Player 2150, Driving Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek and Trivial Pursuit II	£319.00	£349.00	£379.00	£459.00
ATARI STE EXTRA. consists of Standard Pack and Kuma word processor, database, spreadsheet & business graphics as well as First Basic, Hyper Paint, STAC Adventure game designer and Prince game.	£329.00	£359.00	£389.00	£469.00
ATARI STE CURRICULUM. consists of Standard Pack and also 3 levels of educational software (from 5 yrs to 50 yrs !!!), a word processor, a spreadsheet, a database, HyperPaint and Music Maker II software.	£339.00	£369.00	£399.00	£479.00
520STFM STANDARD. consists of the computer with mouse, tv lead, manual and all connecting leads etc. The Standard Pack is supplied with NO software.	£239.00			
520STFM DISCOVERY. consists of the Standard Pack and STOS, First Basic, NeoChrome and 4 games (Carrier Command, Space Harrier, Outrun, Bomb Jack)	£249.00			
520STFM TENSTAR. consists of Standard Pack and Asterix, Chess Player 2150, Driving Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek and Trivial Pursuit II	£259.00			
520STFM EXTRA. consists of Standard Pack and Kuma word processor, database, spreadsheet & business graphics as well as First Basic, Hyper Paint, STAC Adventure game designer and Prince game.	£275.00			

STE RAM KITS

DIY 1 KIT – 520STE to 1MB
(2 x 256K cards) £34.99
DIY 2 KIT – 520/1040 to 2MB
(2 x 1MB cards) £99.00
DIY 4 KIT – 520/1040 to 4MB
(4 x 1MB cards) £179.00
ALL RAM KITS ARE SUPPLIED WITH INSTRUCTIONS, PLEASE CHECK YOUR STE CONFIGURATION BEFORE ORDERING

AMIGA PACKS

AMIGA A500 BASE PACK A500 computer, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software	£299.00
AMIGA A500 1MB PACK A500 computer with extra 512K ram expansion, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software	£325.00
AMIGA A500 ASTRA PACK A500 512k computer, mouse, tv modulator, manuals, Workbench, etc supplied with 10 great software titles (see A500 1MB ASTRA pack below for details)	£325.00
AMIGA A500 1MB ASTRA PACK Amiga A500 computer, 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench etc disks, plus the ASTRA 10 games pack including the following games : Datastorm, Dungeon Quest, E Motion, Grand Monster Slam, Kid Gloves, Powerplay, RVF Honda, Shuffle Puck Cafe, Soccer and Tower of Babel	£350.00
AMIGA A500 "1500" PACK Amiga A500 computer, 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench etc disks, plus Amiga A1500 software pack comprising of :Platimun Works, Deluxe Paint 3, Simm City, Battle Chess and Their Finest Hour	£399.00
AMIGA A1500 BASE PACK A1500 1Mb RAM (expandable to 9Mb) computer with 2 x 3.5" 880k disk drives built in, and a mouse. The A1500 base pack is supplied without software.	£599.00
AMIGA A1500 PACK A1500 1Mb RAM (expandable to 9Mb) computer with 2 x 3.5" 880k disk drives built in, mouse and the following software : Platinum Works, Deluxe Paint 3, Populous, Simm City, Battle Chess, Their Finest Hour (Battle of Britain) and 2 books : "The A-Z of Computer Jargon" and "Getting the most from your Amiga"	£655.00

ST GAMES LESS THAN £3.00 EACH

Asterix, Chess Player 2150, Driving Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek & Trivial Pursuit II

All of the above games are available in the Tenstar Software pack for only

£29.95 that's less than £3 each!

(requires double sided internal disk drive)
NB : These games are not available seperately

BEST PRICES MAIL ORDER

(DEPT NCE), UNIT A, GRAFTON PLACE,
WORTHING, WEST SUSSEX. BN11 1QX

VISA **(0903) 700714** Access

TELESALES 10am till 12 midnight

Telesales : Mon to Sat Returns, Technical & Queries : Mon to Fri (10am till 6pm)

All prices include 17.5% VAT and free UK delivery (average 4 – 5 days) unless otherwise stated. All prices / specifications / special offers are subject to change without notice. Goods usually despatched same day as cleared payment is received. Personal cheque clearance takes 7 days. Please make cheques/P.O's out to BEST PRICES. Mail order only. No callers. Thank You

ADD £2.00 INC VAT FOR NEXT WORKING DAY UK DELIVERY, ADD £37.50 INC FOR SATURDAY UK DELIVERY

BEST PRICES MAIL ORDER · WE HAVE THE LATEST · LOW PRICES FOR ATARI ST & COMMODORE AMIGA · RING US NOW

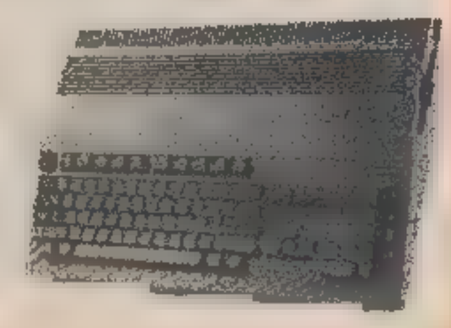
AMIGA DEALS - CLEARANCE PRICE

AMIGA 500 STANDARD PACK

★ A500 computer ★ 512k RAM ★ 1Mb disk drive ★
★ mouse ★ modulator ★
★ power supply ★ operation-manuals ★
★ workbench disks, etc. ★

£299.95

★ VERY LIMITED STOCKS
exclusive to N.C.E readers



AMIGA SCREEN GEMS PACK *featuring* ROBOCOP AND FRIENDS

Just Look At What You Get

★ Amiga as in standard pack
★ Days of Thunder
★ Shadow of the Beast II
★ Back to the Future II
★ Nightbreed
★ Deluxe Paint II

PLUS *exclusive* to Dowling

★ ROBOCOP
★ BATMAN the Movie
★ GHOSTBUSTERS II
★ INDIANA JONES and the Last Crusade

Sale Price - Limited Stock **£349.95**

NEW: AMIGA 1 MEG SUPER GAMES PACK

★ Amiga as in Standard Pack
★ Massive 1 Meg of memory (professionally fitted by ourselves)
★ Robocop ★ Batman The Movie ★ Indiana Jones ★ Ghostbusters 2
★ Dowling MEGA TEN GAME PACK (**RRP £229**) compirising:
R.V.F. Honda, Datastorm, Dungeon Quest, E-Storm, Grand Monster Slam, Kid Gloves, Powerplay, Shufflepack Cafe, Microprose Soccer, Tower of Babel.
★ Wicked 9 Game Pack
★ Microswitch Megablaster Joystick ★ Mousemat ★ Dustcover

All for the incredible price of £399.95

AMIGA 1/2 MEG UPGRADE BOARD

★ Uses latest 4 chip design
★ Memory on/off switch
★ Option of battery backed clock
★ Full 12 month guarantee
★ New super low price

£27.95

Clock Version **£32.95**

3 1/2" HIGH QUALITY DISKS

Box of 50	£19.95
Box of 100	£37.95
Box of 250	£79.95
Roll of 1000 labels	£5.99

★ 100% certified ★ Individually wrapped
★ "Made in Japan" media
★ Fully guaranteed

CUMANA CAX 354 DISK DRIVE "SCOOP"

★ Latest slimline design
★ High speed access
★ Acknowledged as "the best"

RRP £89.95 SCOOP PRICE **£59.95**

AMIGA "FLIGHT OF FANTASY" PACK

★ Amiga as in Standard Pack
★ F29 Retaliator
★ Rainbow Islands
★ Escape From The Planet Of The Robot Monsters
★ Deluxe Paint 2

RRP ~~£399.95~~
£329.95
★ LIMITED STOCKS

AMIGA PERIPHERAL PACKS

PACK 1

Megaboard Ram Expansion.....**RRP £49.95**
40 capacity lockable disk box.....**RRP £9.95**
20 3.5" DS/DD disks with labels ...**RRP £19.95**

TOTAL RRP £79.85 .....PACK PRICE £39.95

PACK 2

Cumana CAX 354 disk drive .....**RRP £89.95**
Megaboard Ram Expansion.....**RRP £49.95**
40 capacity lockable disk box.....**RRP £9.95**
20 3.5" DS/DD disks with labels ...**RRP £19.95**
3.5" disk drive cleaner kit .....**RRP £9.95**

TOTAL RRP £179.75 ...PACK PRICE £99.95

DOWLING COMPUTERS

UNIT 3, FORGE CLOSE, LITTLE END ROAD, EATON SOCON, CAMBS

ATARI STE SUPER PACK - SCOOP PURCHASE

Another fantastic value pack exclusive to Dowling Computers

Just look at what you get:-

★ Latest STE featuring 1.62 TOS (easily upgradable to a massive 4Mb)
★ Super Pack software from Atari featuring the following games:-
Arkanoid - Revenge of Deh, Beyond the Ice Palace, Black Lamp, Buggy Boy, Chopper X, Eddie Edwards Super Ski, Ikari Warriors, Marble Madness, Quadralien, Return to Genesis, Roadwars, Seconds Out, Starquake, Summer Olympiad, Test Drive, Thrust, Thundercats, Wizball, Xenon, Zynaps.

ALL THIS FOR JUST £299.95

NEW !

STE 1Mb, 2Mb and 4Mb LANGUAGE LEARNING PACKS

Yet another Dowling exclusive.

Enhanced STE computer plus over £100 of software comprising

The French Mistress ..**RRP £19.95**
The German Master ..**RRP £19.95**
The Italian Tutor.....**RRP £19.95**
The Spanish Tutor .....**RRP £19.95**
Metacomco Basic.....**RRP £24.95**
Total **RRP £104.75**

1Mb STE.....£339.95
2Mb STE.....£379.95
4Mb STE.....£459.95

SM124 Mono Monitor (when purchased with ST) only £99.95

THE NEW AMIGA 1500 ONLY £699.95 INC VAT

Not only does the Amiga 1500 accept all standard Amiga 2000 peripherals but can also be upgraded to full IBM compatibility. Just feast your eyes on what you get:-

☆ Latest Commodore Amiga 1500 computer complete with 1Mb of Ram (expandable to 9Mb) and 2 x 3.5" 880Kb disk drives.
☆ Platinum Works:- An integrated word processor, database and spreadsheet package.
☆ Deluxe Paint III :- Paint/Animation package.
☆ Populous & Sim City:- Two great strategy games.
☆ Battlechess:- The most exciting game of chess you'll ever play.
☆ Their finest hour:- Battle of Britain brought to life.
☆ A-Z of Computer jargon.
☆ "Get The Most Out Of Your Amiga":- Two introduction books.
☆ Optional 1084S Stereo colour monitor.

This pack with 1084S colour monitor
£929.95

THE NEW 200 SERIES FROM star

"The best printers just got better!"

LC-200 FACT FILE

☆ Multi-purpose 9-pin, 80 column dot matrix printer with colour
☆ Black and colour ribbons included as standard
☆ Electronic dip switches (see LC24-200)
☆ 180 cps draft elite/45 cps near letter quality
☆ High speed draft facility 225 cps at 12 cpi
☆ Swivel selectable push or pull tractor
☆ Bottom feed

RRP £297.85 **OUR PRICE £199.95**

LC24-200 FACT FILE

☆ Versatile 24-pin 80 column dot matrix printer
☆ 200 cps in draft elite/67 cps in letter quality mode
☆ 10 resident LQ fonts
☆ A high speed draft facility of 222cps at 10cpi
☆ Swivel selectable push or pull tractor
☆ Bottom feed
☆ Advanced paper parking with sheet feeder installed
☆ The economy of first and last line printing
☆ 7 K-byte buffer expandable to 39K-bytes

RRP £366.85 **OUR PRICE £239.95**

LC24-200 COLOUR FACT FILE

☆ Multi-purpose colour version of the 24-pin LC24-200
☆ Seven colour printing - black, purple, orange, green, pink, blue and yellow
☆ 30 K-byte buffer expandable to 62 K-bytes
☆ 10 resident letter quality fonts: Sanserif, Times Roman, Courier, Prestige, Script and italic versions
☆ Eelctronic dip switches operable from the push button front control panel (as the LC24-200 mono version)

RRP £424.35 **OUR PRICE £279.95**

STAR LC10 MONO £149.95 **STAR LC24-10 £199.95**

TELESALES ORDER LINE (MON-FRI) 0480 403222/(SAT) 0480 403304

DOWLING

HOW TO ORDER

Access VISA

BY PHONE

Simply call our head office quoting your Access/Visa number on

Mon-Fri 0480 403222
Sat 0480 403304

By personally calling at our St Neots Shop
6 Priory Mall,
St Neots, Cambs
Tel: 0480 403304

BY POST

Make cheques, building society drafts or postal orders payable to:

Dowling Computers

DELIVERY (UK Mainland, most areas)

Please add £6 courier delivery for orders over £100, add £2 p&p for orders under.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

GOLD CLUB SERVICE

★ 7 day money back guarantee if not completely satisfied
★ 30 day exchange for new policy should a fault occur
★ 1 year guarantee giving FREE collection and delivery service should a fault occur
★ Exclusive gold card with personal membership number entitling you to special offers
★ All this for a nominal £10 per item over £100

★NEW★ PLATINUM CARD SERVICE ★NEW★

★ All the benefits of the succesful gold card service (above) plus the following

→ Extended 2 year guarantee from date of purchase. *(Peace of mind for 2 years)*
→ Free use of loan machine should yours need be repaired. *(Now you never need be without your expensive purchase*
→ Free collection and delivery service for the full two years should a fault occur. *(Just make one simple phone call and leave the rest to us!)*
→ Exclusive platinum priviledged customer card entitling you to special offers.
→ All of these benefits for the incredible price of just £39.95 per item purchased.

N.B. In the unlikely case of shortages of identical model loan machines a suitable alternative will be offered.

WHY CHOOSE DOWLING?

★ **ESTABLISHED OVER 5 YEARS**
With a growing reputation for "putting the customer first". We intend to satisfy many more customers for years to come
★ **TECHNICAL SUPPORT/ON-SITE ENGINEERS**
Employing over 20 specialist staff, we are equipped to deal with the majority of queries
★ **FULL TESTING PROCEDURE**
All computer hardware is tested prior to despatch, proving Dowlings commitment to customer care

So choose Dowling and put our reputation to the test!

PICTUREWARE©

For The Commodore Amiga IS HERE!!! ©N.J.N. Williams 1991

ONLY AVAILABLE FROM
NIK WILLIAMS BROADCAST COMPUTER PICTURE LIBRARY
0792 470503

Unbelievable quality
Amazing value!!
Incredible fun!!
Available in
4096 Colour HAM
&
32 Colour IFF
Please specify when ordering
FOR FULL DETAILS PLEASE SEND SAE

LESS THAN £1 PER PICTURE

5 PICTURES PER DISK!!

One disk £4.99
Two+ disks £4.50 each
Up to five disks £1P&P
Six+ disks *post free*

Give your Paint Package a treat! A stunning photograph to work from!! Put life into your DTP/DTV: wonder at the quality, let your imagination run wild!!! See before you buy!!! . Catalogue disk No.1 is 90p & 50p P&P and forms part of our 3 disk demo set which is £3 post paid. Please specify IFF or HAM demonstration disks. Single demo disks also 90p & 50p P&P.

On Pictureware© Catalogue Disk One Are:-

People Disks 1&2
Children Disks 1&2
African Famine Disks 1&2
The Nude Disks 1&2
Edwardian Photo's Disks 1&2
Art In Photography Disks 1&2
African Animals Disks 1&2
Silverback Gorilla Disks 1&2
Views of Vietnam Disks 1&2
African Pygmies Disks 1&2
Motorbikes Disks 1&2
Film Crew On Location Disks 1&2

We can accept
Access
Visa
Cheques
Postal Orders

During Pictureware's© development we've created pictures in all sizes and formats. We're providing them for your fun and entertainment on SPECIALLY PRE-FORMATTED FLOPPIES, £9 for 10 disks, post free! No guarantees on this exceptional offer, if you like the pictures use them, if not delete them (much quicker than a disk format), and use the disks as blank floppies!!!

FREE OFFER!!! With every order of six Pictureware© disks we are giving away FIVE FREE SPECIALLY PRE-FORMATTED FLOPPIES!!! (Worth 90p each!!)
(Offer closes end of June 1991)

"YOUR GRAPHICS WILL NEVER BE THE SAME!!!"

Orders by post to:- Nik Williams Broadcast, Aspect House, 21 Brynmill Crescent, Brynmill, Swansea, SA2 0AL.
Please allow 21- 28 days for delivery, 'phone for urgent orders.

24Hr Credit Card Phone/FAX Hotline 0792 645946
(When ordering by telephone please wait for FAX tone to finish, at which point you'll be connected to our telephone system.)

BLANK DISKS

GUARANTEED 100% ERROR FREE

VERBATIM BULK

3.5" DSDD UNBRANDED.....33p
3.5" DSHD UNBRANDED.....58p
5.25" DSDD UNBRANDED.....25p
5.25" DSHD UNBRANDED.....43p

VERBATIM BRANDED

3.5" DSDD BRANDED.....65p
3.5" DSHD BRANDED.....£1.25
5.25" DSDD BRANDED.....48p
5.25" DSHD BRANDED.....83p

All goods are subject to availability
All prices include V.A.T. / Please add £3.50 for P&P
CHEQUES & P.O. PAYABLE TO

PDA ASSOCIATES

FREEPOST (RCC 2044), Haywards Heath, W Sussex, RH16 3ZA

TELEPHONE 0444 415355

FAX 0444 415356

SURE CANDO!

Following on from the announcement that it is to take on the official distribution of all INOVAtronics products, Checkmate Digital Ltd has announced the formation of a new PD library designed to complement INOVAtronics products, specifically its applications generator system, CanDo.

The new library currently contains only a small selection of disks, but Checkmate main man Steve Jones hopes that CanDo users will contribute to the library by sending in their own CanDo decks. In return, Steve has set up a regular competition which will reward the authors of the best CanDo decks with some exclusive INOVAtronics merchandise including CanDo T-shirts.

Steve sent me a selection of the existing CanDo library disks and I can certainly say that I'm impressed. Each disk is jam-packed with decks (usually at least 12 to 15) ranging from simple games to serious utilities.

Although I didn't manage to see it for myself, Steve even claims that INOVAtronics has even produced a complete home finance package using CanDo which will be available soon through the CanDo library for little more than the price of a disk.

You can find out more about the CanDo PD library by contacting the Deeper Domain, which is managing the library, at 128 Portland Crescent, Stanmore, Middlesex HA7 1NA. I'll be bringing you a full review of the CanDo system itself very soon, but until then, more can be gleaned by phoning Checkmate Digital on 071 923 0658.

WRITE TO ME!

Feeling frustrated? Unable to sleep from the pent up anger within you? If so, then let it all out by writing to me. If you've got something to say which you think would be both beneficial and of interest to other Amiga owners, then I want to hear from you.Similarly, if you have any great tips or tricks for just about any Amiga product under the sun (not just games - I'm just as interested to receive tips for such packages as *Professional Page 2.0*, *Music-X* etc), then get writing. Send your letters to me care of the usual *Express* address.

Jason Holborn

Archimedes

GIVE US A BREAK

I have just seen the last of that white rabbit. Yep, you've guessed it, I've finished *Wonderland*! Although the last couple of puzzles were rather tricky, on the whole the game is relatively simple and very easy to get into. So much so that even my girlfriend and her sister ended up playing it and they put up quite a fight before I could wrest my computer back off them.

Another popular game with my girlfriend has been Superior Software's *Master Break*. As I believe I first mentioned in *Express* 108, *Master Break* is a pretty standard trivia game based on that 'classic' DLT radio quiz *Give Us a Break*. The difficulty of the questions increases the higher the score of the ball – ie reds are the easiest while the blacks are the hardest – and you have a limited amount of time to select an answer from the four provided. A correct response will 'pot' you some points and allow you to continue your break.

Although the game did have some initial appeal, I rapidly became bored with it. Graphical and musical questions are occasionally asked, but do not really add much oomph. The whole game is written in Basic, and the questions stored in plain text files. There is nothing wrong with this, but does leave the game wide open for the cheater!

The worst thing about the game is the excessive amount of time spent in fading the display between one screen and the next. Occasionally three different fades are used one after the other!

Master Break is the best trivia game I've seen on the Archimedes (but that's not really saying much!). If you like trivia games, then you'll probably like *Master Break*, but I personally think that you need to put more into a game than simply asking questions. Superior Software is on 0652 58585.

MENTAL ARITHMETIC

Cambridge International Software seems to have been quite quiet recently, although its *Professional Integrated Project Manager* is now available, as is *Mental Maths*.

I've seen the latter and it seems to be quite good. It's designed to make learning simple mental arithmetic fun by turning it into a game. Four numbered wheels are displayed on the screen. These rotate slowly and it is up to the player to spot a correct 'sum' by clicking on the relevant numbers. Addition, subtraction, multiplication and division are used, along with numbers up to 1000 thus catering for National Curriculum levels 1 to 4. Don't rush out tomorrow and buy *Mental Maths* expecting a fast moving, all action arcade game, but teachers and parents should take a look. CIS can be contacted on 071 833 4023.

THE ULTIMATE GAME-ULATION?

Saloon Cars is to be the next game, or rather, to be precise, 'The Ultimate Game-ulation', from 4th Dimension. According to the press release all the maths in the game were worked out by a physicist at Manchester University and you'll be able to pull two or four wheel skids, and even hand brake turns.

I don't know how well this will all come across as it is notoriously difficult to translate exact calculated physics onto a very two dimensional game screen. You can drive an Astra GTE, BMW M3 or Sierra Cosworth around Brands Hatch or Silverstone, each course complete with grandstands, bridges and pitstops. Apparently the author spent a large amount of time digitising Silverstone last year to get the game geographically perfect. The only problem is that over the winter, Silverstone has been completely rebuilt and the circuit dramatically changed. Perhaps if some less wild claims about

• Saloon Cars *contains an historically accurate record of Silverstone, though the author's original intention was to have an up to date one.*

the game's accuracy had been made it wouldn't be so funny!

Nevertheless, *Saloon Cars* sounds to be quite fun and a lot better than *Powerband*.

Finally, while I'm still on games, look out for the *Chock's Away Extra Missions* disk. I've yet to see a copy of this myself, but I should imagine there is many a *Chockie* eagerly awaiting one! More news as soon as I can.

LASER DIRECT

Here's a little bit of information that I've been meaning to impart for quite a while now:

How does Computer Concepts produce 600 dots per inch (dpi) output from its Laser Direct Hi-Res on 'an ordinary 300dpi printer? Well, actually it doesn't. Or, to be precise, it does but it isn't an ordinary 300dpi printer. Well, actually it is... Here, let me explain.

The Canon LBP4 printer is, to all intents and purposes, a 300dpi printer based on the Canon SX engine. However, it is possible to bypass its usual control circuitry (which is what the Laser Direct board does), modulate the laser beam and thus control the size of dots 'plotted'. This result in true 600dpi printing. (The Hi-Res board is also capable of 600x300 and the more usual 300x300 resolutions, so you can trade off available memory for image quality.) The only real problem with output at this resolution is that you need an A440 at the very least to be able to hold the image which can be up to 4Mb! Still, at around the £1,500 marrk it is the cheapest way to get high quality output on the Archimedes.

If you couple this with £150 for CC's *ShowPage* PostScript preview application, you get an extremely cheap entry point into the wonderful and exciting world of PostScript.

DID YOU KNOW THAT...

ARM machine code instructions do not all execute at the same speed? Most obviously instructions like STR and LDM take longer than MOV, ADD and so on because they are accessing 'slow' memory (MOV and ADD work solely on internal registers and can thus bomb along). MUL and MLA also take a while longer than the wholly internal instructions. However, the speed of these 'slow' instructions can be quite dramatically altered by changing their position in memory.

All instructions have to be word aligned (ie on a four byte boundary), but some instructions work better on certain word alignments than on others. I found this out quite by accident the other day while writing a super fast circle plot routine. My actual dot plot had a couple of bounds checking instructions to start with, to ensure the dot plotted was actually on screen. The plotting was done with a little address calculation and an STRB instruction. I timed the routine for a 1000 circles, and then re-timed it with the bounds checking commented out. Much to my amazement it worked about 20 per cent faster with the bounds checking in! All because the STRB had moved to a 'better' alignment.

I mentioned this to a friend who told me all about it, and showed me all sorts of other ways of speeding up (or rather, not slowing down) ARM code. If I have space in a future column, I'll pass on the information.

Ken Coumarin

64

NEW PILOT, SAME COURSE

Those of you with the extraordinary ability to read 300 words per second will have already realised that a different pilot sits in the cockpit of this esteemed column. I know what you're thinking: "How can ANYONE follow such an entertaining and intellectually stimulating person as Sean?" I can. I'm no stranger to the C64, and currently my pearls of wisdom adorn the Gamebusters page of *Commodore Format*. And rest assured, the consistent quality of this column will remain unchanged. (Ish)

CONSOLE IS NO LAUGHING MATTER

Sean Masterson left us on a rather poignant note a couple of weeks ago,

THIS IS NOT A MISPRINT

ONLY BY PURCHASING OVER 3 MILLION DISKS A YEAR CAN WE OFFER THE FOLLOWING SENSATIONAL PRICES...

Every diskette supplied by Dial a Disc is certified and tested 100% error free.

200 DSDD 3.5" ONLY £60.00

3.5 DSDD 135 TPI DISKS

50 DSDD only £22.00	100 DSDD ONLY £33.00	200 DSDD ONLY £60.00	500 DSDD ONLY £135.00

3.5 High Density 60p each	5.25 DSDD Only 23p each	5.25HD Only 40p each

200 DSDD 3.5 Plus 2 x 100 capacity lock box **£66.00**

DISK STORAGE BOXES
3.5" 40 capacity £2.95
3.5" 80 capacity £3.45
3.5 100 capacity.....£3.95
only if bought with disks

ALL prices include VAT & delivery

OUR PROMISE IS SIMPLE

100% SATISFACTION OR MONEY BACK

DIAL A DISC
203 Southborough Lane, Bromley, Kent, BR2 8AR.
081-467 0131
All offers subject to availability. E/OE.

Supra Modems

Modems from £55

Supra 2400 (V22bis) **£125**
Supra Plus (V22bis + MNP5 + V42bis) 9600 baud **£220**
Supra MNP (V22bis + MNP5) 4800 baud **£175**

Used modems at bargain prices.

Ideal for **Ataris, Amigas & PCs**
Supra modems are guaranteed for *four* years and are auto-dial, auto-answer, and fully Hayes compatible.

Supra Approved Distributor

Open till 8pm **081-566-3639** Open till 8pm

SUPPLY SOLUTIONS, PO BOX 2136, LONDON, W13 8QJ

★ ATARI ST ★ ATARI ST ★ ATARI ST

A brilliant offer for readers of New Computer Express!

Devpac ST 2

FROM HISOFT ONLY £44.95

Devpac ST version 2 is widely regarded as the most powerful assembly language development system for the Atari ST. It incorporates a debugger, stand-alone assembler and a fast linker

IT INCLUDES:

➢ **GenST** Assembler is a high-performance, full-featured, two-pass Motorola standard macro assembler at up to 75,000 lines per minute. It has multiple modules and sections, repeat loops and macro calls that may be nested as deeply as memory allows

➢ **MonST** Debugger is an advanced symbolic monitor, debugger and disassembler. Now in addition it can offer multiple window display, full expression evaluator, up to 22 significant characters in symbols, viewing of source files and conditional breakpoints

➢ **Example Files** of a wide variety including a full GEM type windowing application and an example desk accessory.

The package comes complete with an extensive ring-bound manual plus notes on the various operating system levels and debugging strategies.

Order now by phone from the NCE mail order service or send the coupon to our FREEPOST address.

HOTLINE NUMBER

0458 74011

SAVE £15

Yes, I would like to order a copy of Devpac ST 2

Name .....

Address .....

.....

Tel No .....

I would like to pay by Access Visa Cheque PO

Please debit my credit card

No .....

Expiry Date.....Tel. No .....

Send & make cheques payable to Future Publishing, FREEPOST, The Old Barn, SOMERTON, Somerset. TA11

that of Commodore's shock withdrawal of the C2N Datacorder. One can't help feeling rather confused – Commodore stated that by bringing the price of the C64 down people would be encouraged to buy it rather than the C64GS. So what was the point of releasing the GS in the first place?

Many of the industry cynics will no doubt see this as the end of the C64, those with any common sense won't. One could argue that with multiload games being ported onto cartridge and the ever-expanding budget scene taking over, the disk drive will be pushed out into the cold. We can only speculate for the time being. Personally I see the C64 going from strength to strength, as owners without a C2N will undoubtedly buy one as an enhancement (as soon as they tire of extortionate cartridges). It just goes to prove what an unpredictable industry this is – the mention of a C64 console would have had people in stitches 18 months ago.

DO YOU HAVE THE POWER

If you have a passion for fast-action games but don't have the money to support it, you'll probably welcome Ocean's latest compilation offering. The affectionately labelled *Power Up* features five games, with all but one providing great entertainment.

Altered Beast is a highly accurate and playable coin-op conversion, sporting huge main players and even huger adversaries. The graphics are blocky but effective and the sound is rather mellow (if a touch inept).

Rainbow Islands is the perfect example of a modern classic; within weeks of its release it had built up an enormous following. Sickly sweet graphics and music subtly contrast with the fast-paced gameplay, and each level oozes variety and imagination. A spot-on conversion.

X-Out follows the trend of a million and one *R-Type* clones, yet remains fresh enough to excite the most ardent of shoot-'em-up fans. Graphics have a suitably 'murky' feel, while the music and effects have been accurately converted from Chris Huelsbeck's original 16-bit tunes.

Turrican is undoubtedly the cream of the crop, and indeed the most recent. Solid blasting over five gargantuan levels, each with its own unique graphic style (plus a huge array of repulsive creatures). It also features the largest end-of-level meanies ever to grace the C64.

Chase HQ is the runt of the pack, with repulsive monochromatic graphics (blue and yellow – I ask you). Control of the car is sluggish and unresponsive, and sound is abysmal. Still, you can't have everything I suppose.

Power Up will be available within the next fortnight, and you'd be rather nutty to miss it. Owing to the recent VAT increase the cassette/disk prices have yet to be announced. We'll keep you posted.

BAD TASTE

Now that the Gulf war has thankfully come to an end, numerous television programmes have started to reappear after having been withdrawn during the conflict (such as M*A*S*H). I wonder how many software retailers withdrew 'sensitive' games over the war's duration? Here are a few titles which I would have deemed unsuitable for sale during the past three months; *Operation Wolf/Thunderbolt*, *Rambo III*, *Strike Fleet*, *Swiv*, *Navy Seals* and of course *Saddam Hussein Simulator*.

MEET TRACEY

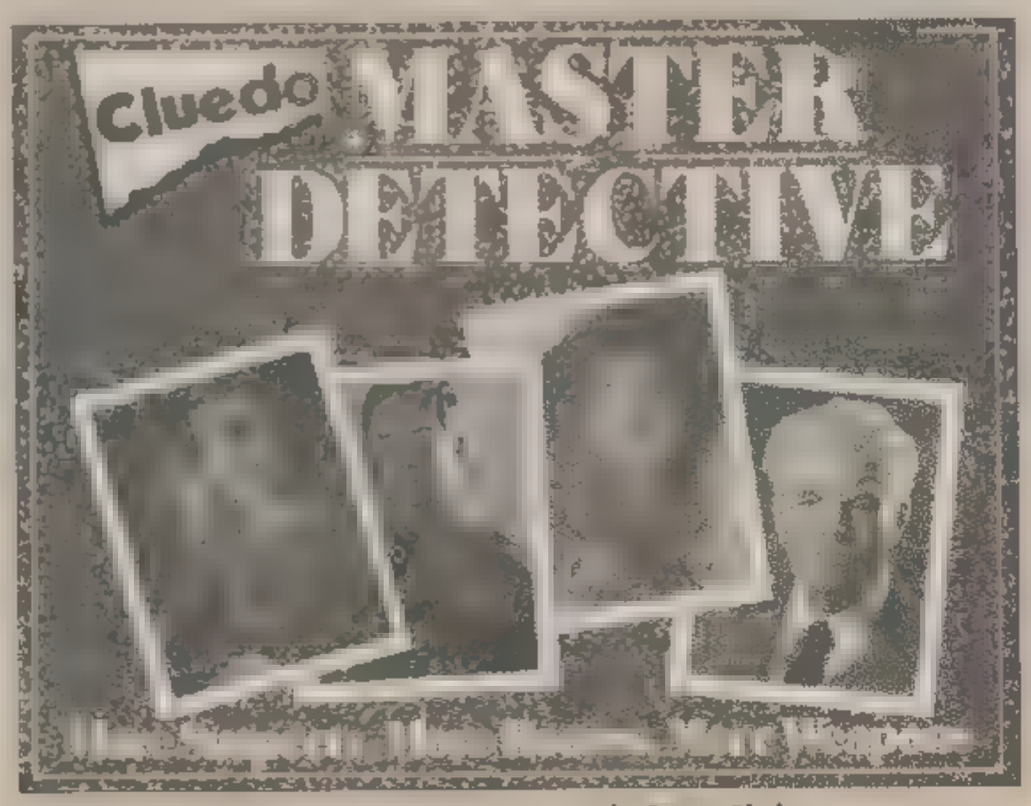
Being an extremely kind individual (not to mention modest) I feel obliged to bring Tracey to your attention. Don't get

MASTERING CLUEDO

Finally this week, a game which will exercise you brain cells rather than the trigger finger. *Cluedo Master Detective* from Virgin is a conversion of the American board game (which hasn't yet surfaced in Britain). Compared to the original it offers six more rooms, 4 extra characters, and an additional 3 weapons. Sounds good already.

Play follows in the traditional fashion, with players taking guesses as to 'whodunnit'. Up to ten players can take part, being either human or computer controlled, and the game tends to roll along at a merry old pace.

As with many board game conversions the other players will have the advantage of seeing your cards when they shouldn't. This is probably the only gripe on what is actually a super little game. Rush out and buy it on cassette (£9.99) or disk (£12.99) or you might just find yourself stabbed to death in the drawing room.



• Cluedo Master Detective: *even more ways to murder Doctor Black*

too excited though, as Tracey is simply a little bit of clear plastic that fits rather snugly on to the side of your mouse. Apart from looking quite trendy it also makes the copying of photographs and pictures an incredibly simple task.

It can be positioned on either side of the mouse, so that both left and right handed people can use it, and can also be removed when not in use. Tracey was created for use with 16-bit machines, but it works equally well with on my C64 NEOS mouse. It costs a mere £7.95 and can be obtained from Sidewise Ltd, PO Box 4, Totnes, Devon, TQ9 7EN.

MORE CREATURES

Fans of *Creatures*, the incredibly cute arcade adventure from Thalamus, will no doubt scream with delight at the mention of *Creatures 2*. Without giving too much away, the horizontally scrolling stages have been dropped in favour of masses of torture screens (which made the original so good). These screens will be interlaced with a fast bonus game where you can pick up bonus points and weaponry. If that has whetted your appetite then don't miss *Express* next week, as we'll have a special preview just for you!

Each week, I hope to bring you a few 'Top Tips' to help you get the most out of your C64 without splashing your money around, and this week's is a real gem. Have you ever seen the anti-glare screens to reduce eye-screen? Have you ever choked on th price of one of those things? Well if you spend lots of time at the word processor (or even programming) and your eyes are feeling the strain then simply turn the colour down on your TV or monitor! Simple but extremely effective – the gray shades are less harsh on the eyes (take it from one who knows).

THE LAST BIT

If you have any hints, tips, or criticisms then paint your nose blue and stand on a grape for three hours or, if you'd prefer, send them in to me at the usual *Express* address, 30 Monmouth Street, Bath, Avon BA1 2BW.

Andrew Roberts

Spectrum

INDIE RAVE 2

More software of a decidedly adventurous persuasion to report on this week. Last column I shocked and fascinated you with a rave review of Zenobi Software's bargaintastic *Best of the Indies* compilation and this time I'm going to tell you about the second similarly excellent volume called, er, *Best of the Indies Vol II*, would you believe. This one comprises another six prime cuts of independent adventure software that you could slap in a big box with a novella, map and poster of scantly clad princess and charge £15 for without any problem. Thankfully Zenobi save trees with a photocopied inlay and takes a wallet and maintain a purse-friendly stance with a £4.99 price tag. You get a lot of adventuring for your money too.

First up is *Crack City*, which gained a Mega Game when reviewed in Your Sinclair. It is a very good, eminently professional drug busting adventure that thankfully doesn't look like it's been written with the PAW utility.

Following that is my favourite of the bunch, an atmospheric gothic horror in two parts called *The Hermitage*. This is actually quite scary with prose that's purple in style and dripping healthily with blood. There's a deep sense of evil pervading both your character and the world around him. It had me reaching for the comfort of my teddy bear I don't mind admitting.

The high standard is maintained by *Gordello Incident*, another from the deviously warped mind of Tom Frost. It's the sequel to the duplicitous *Double Agent* and employs similar double standards as a split screen lets you control two clones. Complications arise because one always does the exact opposite of what you type. According to the bumph not even the author has managed to finish it yet! Two parts are included on the compilation and if you struggle through them you can send off the last bit at a reduced rate.

Zenobi's own contribution to the compilation is *From Out of a Dark Night Sky* which has a sort of '50s sci fi movie plot with alien pods landing on Earth. Again, a good atmosphere is created with some prose that's lilac if not quite purple and it's pretty compulsive to play with some nicely constructed problems.

Also good is *Bounty Hunter*, a solid and dependable quest with a huge 1500 locations although I didn't see quite that many in my short lived go.

Finally, another game of two loads, *Diablo*. And very good it is too with a stack of trendy features that you don't expect to see implemented on the humble Speccy and a story that, for once, doesn't read like a three way collaboration between Jeffery Archer, Exchange and Mart and a nameless sci fi/fantasy author plucked from a Woolworth's bargain book bin. *Diablo* is among the most professional looking indie adventures I've seen and as Mike Gerrard (*Your Sinclair* adventure columnist) remarks in the accompanying waffle, "It deserves the widest possible audience."

All in all then, *Best of the Indies Vol II* is another corking collection of adventures and represents the best value for money package I've seen since, erm, the first volume! Get your copy or more information (with SAE) from Zenobi Software, 26 Spotland Tops, Cutgate, Rochdale, Lancashire OL12 7NX.

Anyone interested in adventures would also do well to ask nicely for Zenobi's vast back catalogue of the things.

SAM MATTERS

There are some pretty interesting developments for the SAM Coupé nearing the end of several pipelines.

Atari ST Owners!

Put Power into your cartridge port

Ultimate Ripper!

The cartridge your ST has been waiting for!

- *Opens up any ST program*
- *Fits easily into the cartridge port*
- *Powerful Tool for all Atari ST users*

Whether you are a programmer, games player, or just curious about the workings of your Atari ST, the Ultimate Ripper gives you the power that you need.

Just look at the features...

● Opens up any program ● Read Memory ● Search Memory ● Print Memory ● Disassemble ● Disassemble to Disk ● Edit Memory ● Search For Graphics ● Search for sprites ● Edit screen configurations ● Set up colour palettes ● Alter plane configurations ● Load & Save Screen Displays ● Run external TOS programs ● Load TOS Programs ● Load & Save graphic screens ● Low Level Disk Editor ● Disk Analyser ● Examine formats ● Format analyser ● File Editor ● Directory editor ● Formatter ● Break & Restart function ● Search for infinite lives ● Look for music ● Play music ● Load & save music ● Search for soundtracker music ● Search for Sound Samples ● Programmers Calculator built in ● Many more features ● Updates available with new software ● Full support for STE sound & Graphics

The Ultimate Ripper

is available ***only*** from

POWER COMPUTING

Ultimate Ripper.....£39.95

Price includes VAT and delivery. All of our products carry a 1 year warranty

The Ultimate Ripper may be ordered by postal mail order or by telephone

We accept Access and Visa

POWER COMPUTING LTD

44a Stanley Street, Bedford, MK41 7RW

0234 273000

(5 lines)

We accept credit orders by telephone on the above number or by fax on 0234 270133
We reserve the right to change prices and product lines without notice

The Ultimate Ripper is sold on the understanding that it is not used to contravene the 1988 Copyright Act.

** Now Available · Full Colour Product Directory £1.49 with free utility disk! **

DEALER ENQUIRIES WELCOME - PHONE OR FAX FOR QUANTITY PRICING

Good old Phil Glover of Birmingham seems to know about quite a few of them and has just written to tell me.

Most impressively, Steve Nutting of SC Assembler fame is apparently developing a 256K RAM module with a battery back up that preserves data even when you switch off. There's also a rumour about a 40Mb disk drive! Adventuring types with a SAM should also be pleased to hear that Gilsoft is thinking of writing a Coupé version of its *Professional Adventure Writer*.

Phil also related an interesting tale of contrasting customer service that I reckon is worth sharing.

"On reading this week's Spectrum column in *Express* I was surprised to see this week's episode in the INDUG/FORMAT saga was missing. Joking apart, I've had quite enough of Mr Benchly. In the last year INDUG was supposed to send me two tapes I'd paid nearly £10 for and two copies of FORMAT, none of which have arrived. After numerous letters and phone calls Mr Benchly claimed that he'd sent the goods, and if they haven't arrived then I have to take the matter up with the Post Office. I've received dozens of tapes and magazines in the last 12 months, but it seems that only INDUG stuff goes astray... Most mags/clubs and adventure mags/software publishers nearly fall over themselves to help correct the trouble, even if they're not strictly liable. I believe it's called customer care."

On a happier note Paul goes on to congratulate BG Services who took the trouble to ring saying there would be delay in sending him one of their Samplifier. Apparently this is "a great little gadget which really shows off SAM's chip in all its stereo glory." Sounds good. Thanks to Phil for the info and letter!

CLASSIC POKE

Here's a poke for a crusty old game of yesteryear. *The Way of the Exploding Fist* wowed your grandparents when first released in 1809 or thereabouts and proved the inspiration for the several thousand martial arts beat-'em-ups we've suffered since then. It's still a veritable corker mind you and pretty hard to complete if only because you need about 23 fingers to perform all the moves at your disposal.

The hacker responsible is the increasingly prolific Steven Kemp of York. Whoop! and riotous applause for him. As per blooming usual he wants me to say hello to someone. So hello Neil "I ain't doin' no lines Miss..." Roberts wherever and whoever you are.

```
1 REM Way of the Exploding
Fist by Steve
10 LOAD "" SCREEN$
20 LOAD "" CODE
30 POKE 40099,182
40 POKE 44386,201
50 RANDOMIZE USR 39982
```

Line 30 gives infinite time and line 40 stops the score from going mad. Thanks again Steve!

Robin Alway

ST

NEW ATARI CD-ROM

The all new Atari CD-ROM, codenamed the CDAR505, was shown at the CeBIT show in Hanover, Germany, last month. It has both a SCSI and an ASCI interface. Along with the software included with the unit you can use with all of the entire ST range. Massive amounts of data can be stored on the unit which has a capacity of 500Mb

The software used by the unit is the *Cobra* retrieval package. It also has the advantage that you can use it as a standard audio CD player on its days off. Price will be about £200, making it an extremely attractive buy.

On the subject of the ST Book, it has recently been revealed that an internal modem will be available on the computer's release in spring 1992. It will be capable of all the usual comms functions, as well as the ability to send and receive FAX messages. The price of the ST Book should cost around the £1000 mark, making it an extremely attractive purchase.

PAGESTREAM 2 IMMINENT

Deron Kazmaier, the president of Softlogik Publishing Corporation, has come clean about the new version of *Pagestream*, the popular desktop publishing program. Version Two has been eagerly anticipated for so long that the folks at Softlogik has got severely ratty at any suggestion of an update. However in an on-line conference recently Deron spilled the beans and announced that *Pagestream 2.0* would be ready within the next couple of weeks.

Although firm details are very thin on the ground, several of the new features were revealed during the conference. One of the most powerful features of *Pagestream* is the file importing formats. Added to the new version are TIFF, MacPaint, GIF, ProDraw & DR2D (which are object oriented Amiga drawing formats) along with IBM EPS formats and an IMG print to disk driver (which would be mainly used for faxes).

Font handling has been tweaked. Existing *Pagestream* fonts can be used, but on-screen outlines will now display point sizes above 26pts, bitmaps will print to dot matrix for very small sizes, Adobe Type 1 outlines are implemented, as are Adobe bitmaps, AFMs and CompuGraphic Intelifonts. All these fonts can be matched up to each other, making life considerably easier.

Linotronic support has been considerably improved. EPS files are now much better supported. This fixes

NEW COMPUTER EXPRESS

Britain's biggest selling computer weekly, packed with the latest news, reviews and technical tips for your machine

Save time, save trouble, and avoid disappointment...

guarantee your copy of NCE every week and get it delivered at no extra charge

54 ISSUES FOR JUST £47.50

Complete and return the coupon or telephone our credit card hotline on 0458 74011 NOW!

YES! Please enter my subscription for 54 weekly issues of New Computer Express at the rate ticked below.

UK	£47.50
Europe	£79.95
Rest of World	£104.95

N.B. All overseas subs are sent by Airmail for speed and safety.

Name _____

Address _____

_____

_____ Postcode _____

Tel _____

I wish to pay (please tick as appropriate)

☐ Access ☐ Visa ☐ Cheque ☐ PO

Card No

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry date ☐☐☐☐

Please make cheques/PO payable to Future Publishing Ltd and send with this coupon to: NEW COMPUTER EXPRESS, SUBSCRIPTIONS, FREEPOST, SOMERTON, TA11 7BR.

things like clipping and it also makes it work better with illegal EPS files. Colour handling has been vastly improved. It is now possible to enter colours via a full CMYK box. If you import an EPS file that includes custom colours, it will add those to your colour palette.

So, if you own *Adobe Illustrator*, you can import a file from it, call Pantone EPS and get all the Pantone colours.

Atari's new FSM-GDOS provides scalable fonts which are on a par with PostScript and the like. Deron revealed that future updates of *Pagestream* would support FSM-GDOS if it took off. *Pagestream* itself will run quite happily with just one megabyte of memory. No British price has been announced yet, but *Pagestream 2.0* in the USA costs $299.95, while upgrades will cost $75.00. This includes all the new disks and two new manuals. *Pagestream* is distributed in this country by Silica Systems who can be contacted on 081 309 1111.

ADVENTURE IN SPY-SNATCHING

I'm not sure why, but adventure games are few and far between on the ST. The Infocom range was converted and the Magnetic Scrolls range provided many hours of enjoyment, but where are they all now? The good news is that a small software house has entered the ST adventure foray by converting some of its popular 8-bit titles to the computer.

Topologika has been knocking out adventure games for a few years now. Two of its more famous programmers are Peter Killworth and Jonathan Partington. These gentleman were responsible for the cream of 8-bit adventures in the mid 80s. Its back list includes *Philosopher's Quest*, *Countdown to Doom*, *Return to Doom*, *Last Days of Doom*, *Hezarin*, *Acheton* and *Kingdom of Hamil*. All these titles are now available, suitably spruced up for the ST, though they're all still text.

• Kingdom of Hamil is just one of the classic adventure games to be converted to the ST by Topologika.

The hardest of these adventures is definitely *Acheton*, a real puzzler which had me guessing years ago when I owned a lesser computer sponsored by the BBC. With these games it really is your mind that will be excercised, not your catoused and warty trigger finger. On the same disk as *Acheton* you also get *Kingdom of Hamil*, originally an Acornsoft adventure.

Also from Topologika comes *Spysnatcher*. This brand new game, written by Jon Thackray and Jonathan Partington, is available now for a mere £14.95. The other titles come on two disk packs and cost £19.95.

Bored adventurers should give Topologika a ring on 0733 244682 or write to PO Box 39, Stilton, Peterborough, PE7 3RL.

ST BOOK RELEASE DATE?

I seem to have annoyed Peter Staddon of Atari with my news piece on the new ST Book. The paragraph which particularly annoyed Peter appeared in issue 125 and read: "Atari has said that the ST Book definitely won't be available this year. However, it does seem likely that a spring launch would not be out of the question." So why is Peter annoyed? Well apparently I'm suggesting that Atari will launch the ST Book this year.

I in no way meant to convey the idea that Atari would launch the ST Book this year. What I meant was spring 1992. Anyone predicting a launch date for a piece of hardware would have to be out of their minds to aim lower than the press release date. Computer hardware companies always come in notoriously late on their predicted launch dates. As a computer journalist I know this better than most people.

I'm sorry if you feel that I'm a "wally" Peter, but please give me some credit. Would I directly contradict myself and Atari within two sentences? Contradictions, I'll leave those to the people that produce the hardware we journalists write about.

Andy Hutchinson

CHECK OUT ALL THE OTHER SPECIALIST COLUMNS IN NEW COMPUTER EXPRESS

- WHOLE WIRED WORLD
- TECH TIPS
- GAMES WEEK
- PD COLUMN
- CIRCUIT CITY
- PROGRAMMING

PLUS ALL THE LATEST COMPUTER NEWS, REVIEWS AND FEATURES

"We'll beat the best, and the rest!"

SKYE COMPUTERS

Recomend that all our Competitors and potential Customers (anybody's)

WATCH THIS SPACE IN THE NEXT ISSUE OF THIS PUBLICATION

FREE GIFT JUST FOR ENQUIRING

FOR COMPUTER PRICES LIKE YOU HAVE NEVER SEEN (AND WE MEAN CHEAP!!)

BE THERE!!

SKYE COMPUTERS

WHOLE WIRED WORLD

Steve Gold dishes up more international computer news. This week, Atari loses out to Nintendo, and AMD steams ahead with a new 386 processor.

ATARI SALES DROP

Poor old Atari – while a welter of new goodies were tolled out at Cebit '91 last month, the company has just turned in a disappointing set of fourth quarter 1990 sales figures.

During the quarter ending 31 December 1990, sales were down 11 per cent on the figures for the previous quarter. For the full year, the reduction was three per cent compared to 1989. Net income – that's profits to you and me – was quite healthy at $14.9 million for 1990, compared to $4 million during the year to December 31, 1989.

Atari officials blame the Gulf War as the primary reason for the decline in sales. However, Atari president Sam Tramiel is looking on the bright side. He said: "Although sales in the fourth quarter were understandably disappointing, the company continues to strengthen its balance sheet. The Atari STE and TT030 computer line, based on Motorola's 68000 and 68030 microprocessors, continues to be a corner-stone of our business."

AMD RELEASES COMPETITION FOR INTEL

Advanced Micro Devices (AMD) has released the AMD386DX-40, a pin-for-pin plug-in replacement chip that is 21 per cent faster than Intel's 33MHz 80386 32-bit chip it replaces. The 40MHz AMD386 has been shipping for several weeks and already some of the smaller customers with 'shorter design cycles' – Northgate, Bell Computer, Orchid Technology and Cybertek – have used the chip in their beta test PC releases.

There are actually two versions of the AMD386 chip – the AMD386DX-40 and the AM386DXL-40 – the latter of which is a lower powered version. According to AMD, the AMD386DXL-40 offers a static design that "dramatically reduces power consumption and extends battery life in portable PC systems."

Sounds good. Even better news is that the new chip is significantly cheaper to PC manufacturers than the Intel workalike. That means cheaper PCs in the longer run.

CENTRAL POINT SOFTWARE GETS ON THE VIRUS BANDWAGON

Central Point Software has released Central Point Anti Virus (CPAV), its first package in the PC anti-virus wars. The software combines virus protection technology with a 24-hour hotline support line, the company claims.

CPAV eliminates and prevents any infection caused by more than 400 known and unknown viruses in DOS, Windows and networked environments, according to the company. The support program also includes a quarterly newsletter to registered owners containing information about new viruses.

Central Point said that its program makes executable files self-protecting. The program also can run as a memory resident module. For users running the Microsoft Windows 3.0 environment on their PCs, a dialogue box alerts the user to virus infections while Windows applications programs are running.

During program installation, CPAV checks for and eliminates viruses from the system before installation, and at the user's option will modify the autoexec bat and config sys files to automate virus protection.

The package includes full mouse support, context-sensitive help screens and pull-down menus. The program interface can be configured to make it suitable for users with different levels of computer expertise.

Contact: Central Point Software Tel: 0101-503-690-2650

APPLE ROCKS THE BOAT IN THE USA

Apple has upset many of its US dealers by running advertisements in *The Wall Street Journal*, *Fortune*, and *The New York Times* that carried the following line: "Prices shown are suggested retail. But who pays retail anymore?"

According to the 18 March issue of *Computer Reseller News*, some resellers, who are used to seeing firm prices from Apple, were shocked to learn that Apple's advertisements for its new printers carried the strong implication that dealers would immediately discount the printers despite reports that the low-priced StyleWriter and Personal LaserWriter LS are in very short supply.

Apple itself has admitted that demands for the StyleWriter far outstrips supply and that the product would be on allocation for 4-6 months. It has not commented on the furore its advertisements have caused.

SYMANTEC UNLEASHES ANTI-VIRUS PROGRAM

Symantec has powered in with version 3.0 of its Symantec Anti-virus for the Macintosh (SAM) package. The major upgrade to the company's anti-viral package for the Apple Mac now features a series of facilities that the company claims allows it to spot new virus programs as they appear in a machine.

SAM 3.0, available now, has been designed to simplify the updating of virus definition files, as well as supporting a virus repair facility. The program places virus definitions in a separate file – when a new virus or strain is discovered, only that one file has to be updated.

To support the program, Symantec is distributing new virus definition files via on-line services such as Applelink and Compuserve, as well as via its virus news line bulletin boards, which are located in the US and the UK. Virus repair capabilities are included free in the definition update. Previously, a user had to buy a separate disk in order to receive the repair.

One new feature of SAM 3.0 is its 'timed macro' capability. Users can set a time for SAM to begin a scan for viruses, at 3AM, for example, or another time when the system is not being used.

SAM 3.0 supports the newly-released System 7 operating system for the Apple Mac, and also works with earlier versions of the Mac's operating system. The package costs $99 in the US, with updates from earlier versions available to registered users for $29. UK pricing has yet to be announced.

Contact: Symantec, 10201 Torre Avenue, Cupertino, CA 95014-2132, United States.

Tel: 0101-408-253-9600

Fax: 0101-408-253-4092

ATARI AND TENGEN STOPPED ON NINTENDO CARTRIDGES

A US district court has taken the unusual step of issuing a preliminary injunction prohibiting Atari Games and its subsidiary Tengen from producing or marketing any Nintendo-compatible video game cartridges.

The ruling halts sales in the US until a trial is held on the merits of copyright infringement claims by Nintendo. At the same time, Nintendo was ordered to post a $1 million bond within five days.

Specifically, Atari Games and Tengen cannot sell or distribute either Nintendo's 10NES program or Atari's Rabbit program contained in its NES-compatible home video game cartridges.

Outside the courtroom, Atari vice president Dennis Wood told reporters: "While this ruling will affect Tengen's NES-compatible business, it does not apply to Tengen's other product lines. It also has no effect on Atari Games' coin-operated business. We will take steps to begin an appeal next week."

The infringement law suit centres on the fact that Nintendo uses a security system that prevents non-Nintendo cartridges from being played on its game consoles, part of a patented computer chip contained in the Nintendo Entertainment System.

In 1986, Atari Games started trying to break the code. In late 1987 Atari was licensed by Nintendo to sell Nintendo-compatible game cartridges, still without knowing how to beat the security system.

By 1988, however, Atari Games' engineers had cracked the NES protection system, then the legal hassles began, with each company suing the other. Nintendo alleges copyright violations. Atari, meanwhile, reckons that Nintendo is illegally monopolising the market.

In her ruling for the preliminary injunction, Judge Smith, the judge in the case, said: "Atari decided to make its cartridges 'functionally indistinguishable' from Nintendo's own games by admittedly copying more than was needed to make a game work on the NES console."

Reacting to the ruling, Atari's Wood said: "We believe that the court's opinion makes it impractical, if not impossible, to independently produce cartridges compatible with the NES."

"Given the proliferation of compatible computer products throughout the electronics industry, we find that the court's opinion runs counter to established practices in the computer industry and is an incorrect interpretation of copyright law," he said.

Privately held Atari Games is not affiliated with publicly held Atari Corporation, the Sunnyvale, California-based computer manufacturer. ■

Evesham Micros

All our prices include VAT at 17.5% and Delivery

3½" EXTERNAL FLOPPY DRIVES

Very quiet ● Slimline design ● Cooling Vents ● Sleek, high quality metal casing ● Suits any Amiga or Atari ST ● Full 1Mb Unformatted Capacity ● Quality Sony / Citizen Drive Mechanism ● Convenient On / Off switch on rear of drive ● Long reach connection cable for location either side of computer

AMIGA VERSION ONLY **£54.95** | ATARI ST VERSION ONLY **£59.95**

TRUEMOUSE (ST OR AMIGA)

WE GUARANTEE that this is the smoothest, most responsive and accurate replacement mouse you can buy for your Atari ST or Amiga. Excellent performance, amazing low price !

£17.95 *SATISFACTION GUARANTEED*

NEW! ZY-FI amplified stereo speakers

GOT AN AMIGA, ATARI STE, ARCHIMEDES OR SEGA MEGADRIVE? THEN GET THE FULL SOUND POTENTIAL WITH THIS PAIR OF FULL RANGE SPEAKERS !

Enjoy quality stereo sound reproduction *to the full* with this specially designed, great new twin speaker system! Features reflex ported speaker design with 6 separate drivers in each unit, and incorporates a built-in amplifier with adjustable volume control. Runs from PSU (supplied) or from batteries (not included)

ONLY £39.95 INCLUDING VAT AND DELIVERY

PRINTERS

ALL STAR PRINTERS INCLUDE 1 YEAR ON-SITE WARRANTY

Star LC10 Mk.II best-selling 9-Pin, SPECIAL PRICE	£ 159.00
Star LC 200 9-Pin Colour, 4 fonts, 180/45cps	£ 209.00
Star LC 24-10 24-Pin multifont, 180/60cps	£ 215.00
Star LC 24-200 24-Pin multifont, 200/67cps	£ 249.00
Panasonic KXP1123 24-Pin, EXCELLENT LOW PRICE	£ 199.00
Olivetti DM100e 9-Pin, Includes 1 Year on-site maint.	£ 199.00

olivetti DM124C 24-pin COLOUR printer

Professional Quality 24-Pin Colour Printing - affordable price!

200 cps draft, 50 cps LQ ● 7 Colour output, resolution 360 x 180dpi ● Complete with cable, Ribbon & 12 MONTHS ON-SITE WARRANTY

SPECIAL OFFER! **£269.00** Including VAT and delivery

LYNX Portable Games Console

Only £99.95 INCLUDES POWER SUPPLY & GAMECARD OF YOUR CHOICE!

LYNX GAMECARDS

Cigarette Lighter Adaptor	£ 9.99	Lynx Pouch	£ 9.99
Sun Visor / Protector	£ 5.99	Lynx Kit Case	£ 14.99

PHILIPS 15" TV/MONITOR

With its dedicated monitor input, this model combines the advantages of a high quality medium resolution colour monitor with the convenience of remote control Teletext TV - at an excellent low price !

£269.00 Including VAT, delivery & cable

Philips CM8833 Mk.II including ST or Amiga cable .. £ 249.00

ATARI

EVESHAM MICROS PRICE PROMISE - WE WILL BEAT ANY GENUINE ST COMPUTER OFFER ON A LIKE-FOR-LIKE BASIS

KICK OFF WITH THIS DEAL FROM EVESHAM MICROS !

'Kick Off 2' ● 'Tracksuit Manager' ● 'Subbuteo' & Quickshot 3 Turbo

FREE WITH EVERY STE or STFM PACKAGE !!

520 STFM 'DISCOVERY PACK'

High quality, good value package based around the 520 STFM computer including 512K RAM, 1Mb Drive and built-in TV modulator. Also supplied is :

STOS Games Creator, Carrier Command, Space Harrier, FirST BASIC, Outrun, Bomb Jack, Neochrome, Atari ST Tour

plus 'Discovering your Atari ST' Book

£269.99 Inc.VAT and delivery

ONLY £299.99 WITH 1MB RAM FITTED

1040 STE 'FAMILY CURRICULUM PACK'

Package consists of a 1040 STE with a collection of both educational & productivity software, including :

Educational Software modules, split into three age categories, from Early School to GCSE revision

Productivity Software featuring Wordprocessor, Database and Spreadsheet (RRP over £100)

PLUS! Hyper Paint, Music Maker and FirST BASIC

£359.99 Inc.VAT and delivery

ONLY £439.99 WITH 2MB RAM FITTED

ONLY £519.99 WITH 4MB RAM FITTED

SM124 monochrome hi-res monitor	£ 109.00	520 ST Plug-in Solderless 512K upgrade	£ 69.95
Philips CM8833 Mk II, inc cable	£ 249.00	520/1040 Plug-in Solderless 2MB upgrade	£159.95
Philips TV/Monitor, NEW DESIGN, inc.cable	£ 269.00	Reference 40Mb SCSI Hard Disk inc PSU	£399.00
Truemouse excellent replacement mouse	£ 17.95	Reference 100Mb SCSI Hard Disk inc PSU	£599.00
Joystick Accessibility Adapter for ST's	£ 4.95	Golden Image Handy Scanner Package	£179.00

ATARI ST SOLDERLESS RAM EXPANSION SYSTEM (SIMMS)

Fits STF, STFM or MEGA series machines in minutes ! ● Uses SIMMS RAM Modules for Effortless Upgradeability ● Probably the neatest ST RAM Upgrade available !

RAM Upgrade with board unpopulated	£ 59.95
RAM Upgrade With 512K RAM installed - upgrades a 520 to a total 1Mb RAM	£ 89.95
RAM Upgrade With 2Mb RAM installed - upgrades a 520/1040/Mega1 to 2/2.5Mb	£ 174.95
RAM Upgrade With 4Mb RAM installed - upgrades a 520/1040/Mega ST to 4Mb	£ 284.95

N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering

AMIGA SPECIAL DEALS

AMIGA 500 1MB SCREEN GEMS PACK

NOW INCLUDES 1MB RAM, plus 1Mb Drive, TV Modulator, also 'Night Breed', 'The Beast 2', 'Back to the Future 2', 'Days of Thunder', 'Deluxe Paint II'

A500 1MB SCREEN GEMS PACK

ONLY £369.99

A500 1MB Screen Gems Pack PLUS our 3½" Floppy Drive

ONLY £419.99

Buy an Amiga Feature Pack From Evesham Micros AND YOU ALSO GET ....

THESE *FABULOUS* GAMES:

Tracksuit Manager '90	Subbuteo	Diet Riot
Block Atlanche	Lost'N Maze	Discman
Battle Squadron	Jaws	Tank Battle
Treasure Trap	Nigel Mansell	

PLUS! A wordprocessor and spreadsheet

N.B. *Not* supplied with A500 'Base Pack' offers

AMIGA 500 CLASS OF THE 90'S PACK

Inc A501 512K Upgrade, TV Modulator, software etc

CLASS OF THE 90's Package ..... £ 549.00

Class of the 90's Pack PLUS 3.5" Drive .. £ 600.00

AMIGA 1500 STARTER PACK

Inc A1500 CPU (1Mb RAM, 2 x 3½" Drives, 8 expansion slots), CBM Col Monitor, plus special software

A1500 STARTER PACKAGE ..... £ 949.00

AMIGA 500 COMPUTER BASE PACK

Features a Genuine UK version 512K Amiga 500 plus TV modulator, Mouse, PSU, Kickstart 1.3, etc. *Does not include extra games software*

Amiga A500 Base Package (no extras)	£ 307.49
A500 as above, with our 512K RAM/Clock Upgrade fitted	£ 337.49
A500 Pack plus External 3½" Drive	£ 349.99
A500 Pack plus External 3½" Drive *and* 512K RAM/Clock Upgrade fitted	£ 387.49

AMIGA 500 512K RAM/CLOCK UPGRADE

Direct replacement for the A501 Expansion ● Convenient On/Off RAM Switch ● Auto-recharging battery-backed Real-Time Clock ● Compact unit size ● Ultra-neat design

ONLY £32.95 including VAT and Delivery

Available without clock for only £27.95

A500 1.5MB RAM EXPANSION (requires Kickstart 1.3) ... **£89.95**

Evesham Micros

RETAIL SHOWROOMS

Unit 9, St. Richards Road, Evesham, Worcs WR11 6XJ
☎ 0386 - 765180
fax : 0386 - 765354
Open Mon - Sat, 9.00 - 5.30

5 Glisson Road, Cambridge CB1 2HA
☎ 0223 - 323898
fax : 0223 - 322883
Open Mon - Sat, 9.00 - 5.30
IBM Dealer ● Corporate Specialist

1762 Pershore Road, Cotteridge, Birmingham B30 3BH
☎ 021 - 458 4564
fax : 021-433 3825
Open Mon - Sat, 9.00 - 5.30

ALL PRICES INCLUDE VAT @ 17.5% AND DELIVERY

Same day despatch whenever possible. *Express Courier* Delivery £5.00 extra.

MAIL ORDER DEPARTMENT

Unit 9, St Richards Road, Evesham, Worcs WR11 6XJ

Access | VISA

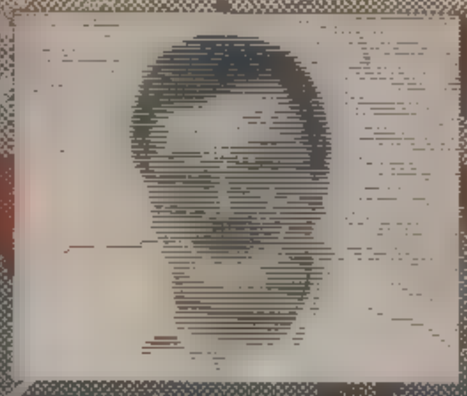
Call us now on ✆ 0386-765500

Lines open Mon-Sat., 9.00 - 5.30. Fax: 0386-765354
Technical support (open Mon-Fri, 9.30 - 5.30): 0386-40303

Send an Order with Cheque, Postal Order or ACCESS/VISA card details. Please allow 5 working days for Personal Cheque clearance.

Government, Education and PLC orders welcome. All products covered by 12 Months Warranty. All goods subject to availability, E. & O.E.

TECH TIPS



Ever wondered how harmful a laser is? Want to know the easy way to scan images? Or even how to make drawing the pools easier? Send your stories and queries to Keith Pomfret, Tech Tips, New Computer Express, 30 Monmouth Street, Bath BA1 2BW.

HELP! Basic database

I have struggled for a couple of years to write a database program for my PC. I learned computing on a BBC B which had the BASIC language on a ROM inside it, so this the language that I feel most comfortable with.

I want the database to record the details of members of a computer club of which I am the secretary. The problem is that as I get the program to work, I think another utility that would make it even better. I'm on version 12 now and to be realistic it's never going to work properly. All of the bolt-on loops and routines bring with them a time overhead and it can take half a minute to dig out a record.

I come to the conclusion I should consider a couple of alternatives. I can either learn a new language or move on to a commercial program. I was against the idea of a new language but we're changing the computers where I work from PCs to a mini system and there are a couple of originals of *RapidFile* going free with original disks and documentation.

What I need you to tell me is, would *RapidFile* do the job for me – and is there any way of speeding up my program without learning a new language?

John Fetter, Dulwich

If you want to take the easy way out, *RapidFile* will certainly do the job. It will run on any true XT or AT clone and contains features that will hold your name and address lists, mailing labels, checks, calculations, inventory, form letters, accounts and reports.

To help you even further, there's a spelling checker and a thesaurus. If there's an original going begging, grab it with both hands. *RapidFile* comes from Ashton Tate (themselves responsible for *dBase*) and will be worth its weight in gold to you.

If you want to speed up your own program, print it out and take a long look it. BASIC programs become clumsy and cumbersome when you add bits as you need them. It may be that you've done the same sort of routine several times in the program, so perhaps you can combine several routines into one module. This should make the program more compact.

You didn't say which dialect of BASIC that you're using or whether it is compiled or interpreted. If you are using an interpreted BASIC, get hold of a compilable BASIC, make the necesaary dialect adjustments and it should run a good deal faster once compiled to code instead of being interpreted an instruction at a time.

HELP! Joystick division

• The digital approach for the Amiga...

• But analogue for the PC version

What equipment or adaptor do I need in order to plug my joystick into a PC? I have an IBM XT clone – plus an Amiga and a couple of joysticks. Now most of the Amiga games only use one joystick at a time so I thought I might as well have the other one attached to the PC. The XT has no joystick socket but I know that most of the PC software can use a joystick – so how do I plug one in?

Ade Walker, Newcastle upon Tyne

First the bad news. The joysticks you use with your Amiga are different to the ones used with a PC and are simply not compatible. The Joystick used by the Amiga and most other computers is digital. That means that as you move the stick to one of the positions, a switch closes and makes a circuit that can be on or off.

A PC joystick is analogue: a couple of potentiometers measure the changing signal across the X and Y axis of the joystick and from their output the PC can work out the exact position of the joystick. This a more accurate but more complicated system. In order to interface your PC with an analogue joystick, you'll need a Games I/O card. This is generally a half or one third length card with the necessary 15D connection for an analogue joystick.

Now the good news. It needn't cost an arm and a leg to set your PC up for joysticks. A games card can cost as little as £12.50 (Seen recently at the All Formats show) and an analogue joystick can be had for about £20. If this is too much, keep an eye on the Shopping Express reader ads.

HELP! Flat ST

What are flatties in my ST? I was hoping to upgrade the RAM from 512K to 1024K but the shop I took it to said that it is a nearly impossibble job because the memory is made up of flatties. I have searched the manual and can find no mention of this.

I've since found a company advertising in an ST magazine that will do a memory upgrade to any ST, but first I want to solve the flatties puzzle!

Neil Beecham, Maidenhead, Berks

I think the flatties that you refer must be surface mounted chips. These are attached directly to the circuit board instead of being attached by legs into sockets. As there are no sockets, your local dealer probably thought that the job would be too much hassle.

It shouldn't be too difficult, and there are several companies which specialise in ST memory upgrades. One of the simplest routes is via a circuit board that fits over the memory management unit in the ST, allowing the memory to be upgraded to 1Mb. If you are competent with a screwdriver and don't mind waving bye bye to the warranty, you could get the board from Third Coast Technologies (0257 426464) and try fixing it yourself.

But only if you're confident of your abilities though. Don't risk a good computer to save a few quid.

HELP! CPC cartridge

The CPC plus seemed like a good logical progression, what with its cartridge port and having all of our software on disk, so we bought the new machine. But I have to say that it is a disappointment. All of the exciting new features only work in the cartridge mode so we haven't made much of a gain on the original machine – unless we buy cartridges.

I've learned enough CPC BASIC to write programs for my own entertainment and have even taught the kids to play screen spirographs with Logo. I want us all to get more out the machine so it's time to learn machine language or assembler or whatever it that produces all of the commercial games.

there a book which will teach me a bit about low level programming specific to the Amstrad CPC?

J Bragg, Paignton, Devon

There are several books that fit the bill and whichever one I suggest, I've no doubt that someone else will suggest a 'better' one. Still I'll risk it. *Machine Code for Beginners on the Amstrad* (ISBN 0-7447-0025-6 at £6.95) should fit the bill without breaking the bank.

It was written by Steve Kramer seven years ago but it offers a logical, well-defined approach to machine code programming. If you have difficulty getting hold of a copy there are several other books available.

HELP! What's in a name?

I've heard it's possible replace the nasty 9-pin printer of a PCW with something better. An article in a PCW mag showed a PCW with a Star 24-pin printer attached. Can I go a step further and run a laser printer from the PCW?

In my office there are two (Epson) laser printers shared by five computers. I noticed a spare 'spur' under my desk and was told there used to be six computers attached to the printers. There is a manual switch box so before you use a printer, you have to switch it to your computer. The laser printers are used in Epson emulation mode and no-one minds if I can add my PCW to the set-up. I use *Protext CPM* on the PCW and I'm sure that this can be configured to drive an Epson printer.

May Vale, Truro, Cornwall

You will need a parallel interface on your PCW in order to connect it to the Epson Laser but other than that it should be plain sailing. You'll need to configure *Protext* so that it knows to drive an Epson Printer instead of the Amstrad

nasty 9-pin. Instructions on how to do this are in the *Protext* manual.

The parallel interface connects to the PCW via the edge connector at the rear of the monitor cabinet and a standard parallel cable will connect the interface to the printer. Set the switch box to your spur– and away you go!.

■ HELP! Warranty worries

I was asked by Heathrow security to open up my laptop so they could check that it didn't have a Semtex battery. I argued and was allowed to prove that it was a genuine, working computer by loading up and running some software from the hard disk.

The thing that worries me is that, as a regular traveler, I often take a laptop on a plane to work with. So far, it hasn't got as far as disassembly but one day soon it looks as if it might.

If I am forced to take the laptop appart ■ satisfy the curiosity of security men, will the warranty suffer? Will the manufacturer refuse to look at the machine if it has been tampered with in this way?
AJ Buckley, Thornton Heath

There's no simple answer to this. It depends on the manufacturer. In simple terms, if you open up a computer this will normally invalidate the warranty.

But if you're forced to open the machine, you should contact your manufacturer and dealer as soon as possible, explain why the machine was opened and ask them to inspect it and confirm that the machine hasn't been affected. They aren't obliged to do this and will probably charge you for the service but with laptops costing up to £8,000, your warranty could be worth a lot of money. If the machine has only been opened for inspection and not damaged there's no reason why they should refuse to reinstate your warranty.

■ HELP! MIDI compatibility

My son pointed out the MIDI ports on his Atari ST when we were planning to buy a keyboard for his sister for a forthcoming birthday. He is under the impression that if we buy a MIDI keyboard for his sister, they will be able to utilise his ST as a multi track recording studio. ■ this true? He has a sequencer software package from the public domain for a couple of pounds. Will this be what he needs?

He is right. As long as you buy a keyboard with MIDI ports, you'll be able to use the ST and the sequencer to drive it. ■ you can get a multi-tymbral keyboard this will be even better as you will be able to assign different MIDI voices to different tracks.

This means that you could, for example, record a bass on track one, piano on track two, strings on track three, a couple of solo instruments on tracks four and five, and percussion and effects on the remaining tracks.

You would also be able to play back your orchestration ■ multi-tymbral mode playing all of the tracks together. This would be as versatile as the keyboard would allow.

The other good thing about MIDI is that it's expandable. Tracks that you record on a £100 micro-keyboard today will play back on any instrument equiped with MIDI. This means that something recorded at home could be taken to a studio and played back on a £250,000 synclavier. As your system grows you don't actually lose anything. It grows too.

■ TIP! Punch drunk

I took ■ 720K PC disks (3.5 inch variety) and, using a hole punch, added the extra hole needed to persuade my PC that they are in fact 1.44Mb disks. The hole punch was on the desk anyway and the job took ten minutes. The PC will read and write to all but two which give a media error. That isn't much ■ a penalty when you consider that I've got the equivalent of an extra 23 disks for free.

What annoys me is that I've spent the last two years and a lot ■ my firm's money buying the expensive disks.
Roland Watkins, Glasgow

You aren't the first, and you certainly won't be the last, person to realise that a minor modification to ■ disk can double its capacity.

Although you have what seems to be a low failure rate (eight per cent) you may find that the failure rate increases. The media on a 720K disk isn't as dense as that used on a 1.44Mb disk and people using converted 720K disks have reported a high failure and data-loss rate.

If this penny-pinching approach involves your company's valuable data – think again. That little extra that you pay for a guaranteed 1.44Mb disk ■ certainly worth it ■ the long run.

■ HELP! Sounds like an Amiga

After a year of eye-screwing-up we've graduated from a TV to a monitor for our Amiga A500. Following your advice some time ago, I purchased an Amstrad monitor from the Amstrad CPC series and my pictures are much clearer. Unfortunately, the monitor has no sound and although we've successfully connected the twin stereo phono outputs on the Amiga to the hi-fi, Dad doesn't like *Outrun* through his precious Bang & Olufsen. Is there a purpose-made mini stereo for the Amiga or can you suggest an alternative?
Tracey Laing, Telford

There are several companies advertising stereo amplifier and speaker add-ons for the Amiga. For a ready-made solution you could contact Trilogic on 0274 691115. Trilogic does a teeny amplifier and a choice of either car type stereo speakers or rather elegant bookshelf speakers. If you want to mix and match yourself, try your nearest Tandy where they do a variety of amplifiers and speakers.

Although the Amiga has undoubtedly the best sound of any computer, it can still be limited if in use as a sound module for MIDI. If I bought the Checkmate 1500 or Bodega Bay and a bridgeboard, could I run the Roland LAPC1 soundcard or is there a simpler way to achieve this result? It seems expensive but it's what I want.
Tim Emmanuel, Golders Green

A much simpler and much easier way to achieve the same result is to attach a standard MIDI interface to the Amiga and then add a sound module to that using standard MIDI cables. The LAPC1 is a PC card with the sound capabilities of a Roland MT-32 sound module. You can generally buy an MT-32 fairly cheaply second handt.

All you'd need then would be some decent MIDI software and you'd be set up nicely. Your interface could cost you anything from about £20, a decent suite of MIDI sequencing software can be had for under £100 (Try *MRS* from Doctor T) and the MT-32 shouldn't set you back more than £100.

To do it the way you'd planned would cost you over £1,000 in hardware and software and you'd be no better off.

I have an Amiga 500 with 1Mb and an extra drive. When I bought it (second hand) it came with a piece of software called *Audiomaster II* which is a sampler and player. There are a few demos on the disk and I am impressed enough to want to try sampling myself.

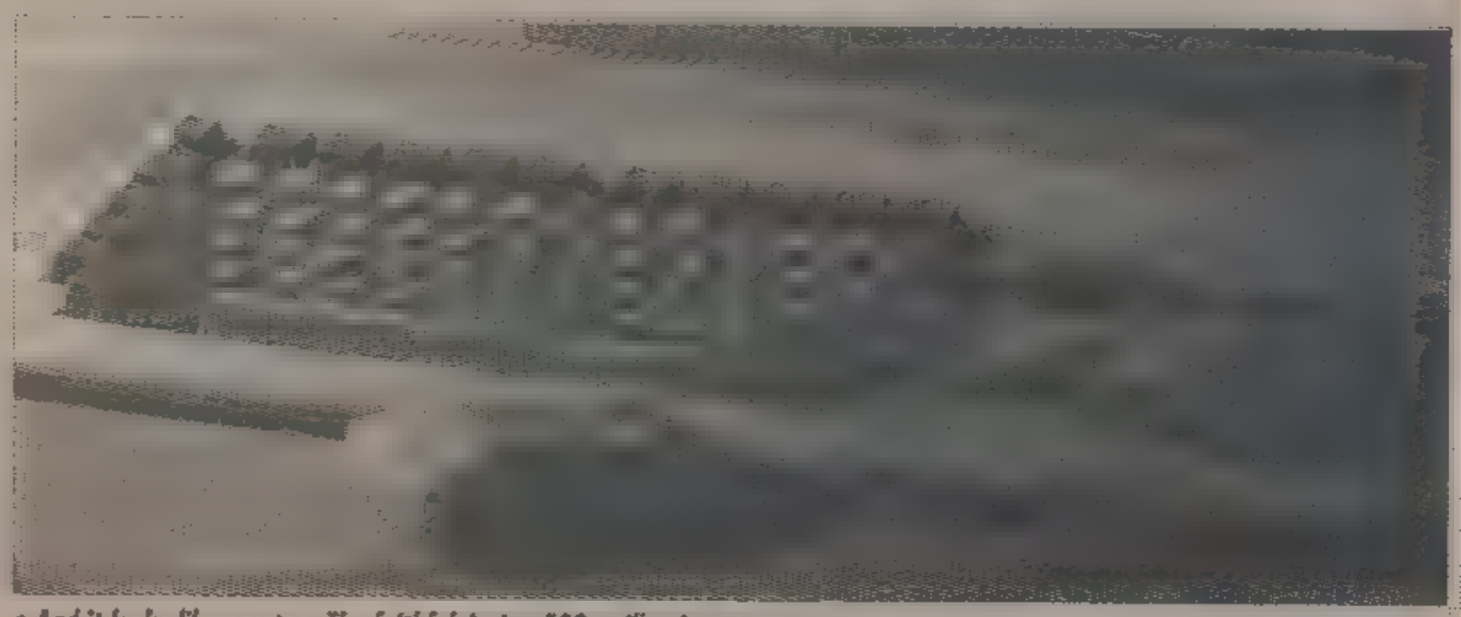
A friend has offered me the Trilogic Mk 2 stereo sampler and I want to know whether this will work with *Audiomaster*. I also want to know if I'm breaking the law taking samples from my CDs. My dad says I am (he's a stiff) but my mum says if I only do it for my own fun, no one will know and it doesn't matter.
Mike Brough, Coventry

The Trilogic Sampler will work with your *Audiomaster* software. Incidentally there should also be some sampling software with the sampler. It's quite basic but it's good fun and an easy way to learn about sound manipulation. There's also a new version, *Audiomaster III*, which is everything that its predecessor was and more besides. If you want to get hold of a copy, give Silica Shop a ring on 081-309 1111.

To address your other question, sampling copyright material without permission from the copyright holder is theft. It's no different from any other theft. By sampling other peoples work you are potentially depriving them of the benefit (financial or otherwise) of their own work.

Having said that, I'm sure that everyone who has ever played with a sampler has fed something commercial into it if only to find out what Madonna sounds like singing backwards. But the real harm isn't done by somebody having an occasional giggle by manipulating a well known commercial sound, but by the kind of people who pass off other someone else's work as their own. If in doubt, don't ...

If you are going to sample sound, why not try to be original and look for new sounds instead of borrowing other peoples. This isn't difficult. With a cheap (£20) microphone and a tape recorder, I went out to look for sounds and came back with some quite splendid noises. The best was a slapping bass guitar sound that was made by plucking the alternator belt of a 38 tonne Foden truck with a tyre iron before manipulating the frequency and content in a sampler. This may sound extreme, but it proves there are plenty of usable sounds available.



• And it looks like one too. The faithful Amiga 500, still going strong...

KAO
TDK
KAO MF2DD
1Mb capacity

OPENING HOURS
Mon-Fri 9.30am-7.00pm
Sat 9.30am-6.00pm
Sun 10.00am-3pm
THE WORLD'S FINEST DISKS FROM T.D.K & KAO SERIOUS QUALITY FOR SERIOUS USERS
Free delivery on orders over £50
NEW LOW PRICES
50 100
1 MEGABYTE 3.5" MF2DD BULK 50p each or £24.00 £48.00
2 MEGABYTE 3.5" MF2HD BULK 75p each or £35.00 £68.00
KAO MF2DD BULK DISCS 8 COLOUR: BLUE, GREY, RED, YELLOW, GREEN, BLACK, ORANGE, FOG WHITE
STAR PRINTERS LC-10 Mono £150 LC-200 Colour £240 LC-24/200 Mono £240
HP DESK JET 500 ONLY £
VAT with FREE postage & packing on orders over £50.00. Overnight
K.C. VIDEO, 6 & 8 DONCASTER ROAD, SOUTH ELMSALL
NR. PONTEFRACT, WEST YORKS, WF9 2YZ
TEL: (0977) 649100 FAX: (0977) 643312
Access
VISA

◆ FOR SALE

MEGADRIVE PAL with 3 games, Strider, Ghouls and Ghosts and John Madden's Football. £150. Sell megadrive on it's own for £110. Tel: 0925 754175.

PANASONIC KX-PII24 24pin printer, £150. 20 inch B/W composite monitor, £25.00. Computer stand, solid wood, laminated, £20.00. Printer stand laminated £20.00. Some original PC software. Philips, 081 749 6185.

VTX5000- boxed and unused £20. Tasman printer interface with software. £20. DK Tronics joystick interface, £6. Kempston printer interface, £20. Leave you address, on 0324 83201.

SIXWORD disk drive interface for ZX-Spectrum with 3.5" double sided disk drive. Has snapshot button for sving games. Leave you address on 0324 83201. £100.

ATARI Lynx, Calif games, Road Blasters, Simple World, PSU Comlynx cable! All boxed. Lynx proffesionaly re-sprayed red! £100. (0793) 782748 after 6pm for details.

WANTED FOR CASH

We buy/sell P/X & repair IBM's, Amiga, ST, etc.Working or not.

DMR Electronics

0274 817889 or 881308

SHARP IQ 7000 electronic organiser, 32k RAM and manual. As new, £100 o.n.o. Phone Mitesh, 0442-250065. (evenings)

NINTENDO gameboy, console plus Lightboy, Tetris and revenge of the Gator. Only three months old and fully packaged. Value: £130, but selling for £99. Tel:- 0245 257 653 between 5-7pm.

PERFORMANCE PD, 30 Prospect Road, Dulton Broad, Lowestoft, Suffolk, NR52 3PT. Tel:- (0502) 513923. All disks £1.00 or 50p each if you could send your own disks. Send for your disk list. TO ST's only.

ATARI ST originals for sale, 50 titles including: Batman, Anarchy, Escape, King's Quest, Scrabble etc etc. £5-£8 each. Telephone Sheffield (0742) 401983 anytime.

PC ENGINE for sale, PAL version with TV/AV Booster, Final Lap and World Stadium Baseball, only £90. Phone 0924 896012 and ask for Pete.

LYNX Calif games, Road Blasters, Slime World, PSU, Complynx cable. All boxed, VGC. Unique red sprayed Lynx. £100. (0793) 782748 after six. No exchanges.

COMMODORE MPS 801. Needs repairing (new head). Good condition. Very cheap at only £30. If interested then write to: Paul Larkin, 41, Hartfield Crescent, Grovehall, Hemel Hampstead, Herts, HP2 6DA.

COMODORE VIC-20 computer, data recorder, PSU, games, immaculate, £30 + £3 postage. Acorn soft Micro Prolog ROM for BBC computers, £15 + £2 postage. 081-807 8157.

APPLE IIE computer, two drives, mono, original manuals, £35. Amstrad PPC6400, dual drive modem, including case, manuals, software £545. As new, hardly used. Offers to D. Bush. Tel: 0304 381881 A/phone.

ATARI ST, 40 meg hard drive with built in 31/2 disk drive and 51/4 disk drive with switching unit. Yours for £450. Ring Paul, on 0494 33801 or v.n.o.

'SAM COUPE' with disk drive and external drive printer interface, hardly used £150 o.n.o. Will split also multiface 128, £15 and Speedrum £10, both for Spectrums. Ring after 5pm. 051 928 0348.

AMSTRAD 6128 colour. Silcon disk miltiface and Romdos, CPM+ and Firmware manuals. Lots of software and disks, magazines etc. Fully boxed. £280 o.n.o. Call Chris Ridley. 0400 61691. (Lincs)

AMIGA A500 with 1.5meg memory board plus 2nd drive £380, also Amax 2 with ROMS £120 Buyer collects or pays delivery. Tel: York 0904 416092 evenings or weekends.

NEO GEO with Majician Lord joystick and leads £300 (Scart) or swap for PAL magadrive or PC Engine or Amiga. Phone (051) 547 2133. After 6.30pm.

screen, 1.44Mb floppy drive. Brand new, unwanted gift, never used. Real bargain at £1900, over £600 saved. Phone 0422 831512.

ATARI 130XE and 1050 disk drive plus books and disks £185. W52000 modem and cable £50. Call Iain after 7pm. 0702 610424.

AMSTRAD fax machine FX5000. As new , boxed, many features. £290.00.Yamaha keyboard stereo, chord memory ect £70.00. Arcade machine, twin joystick, 2 games, boards, £75.00. Atari ST games from £3. Croydon 081 689 5883.

SPECTRUM 128k +2 with over 60 games 31/2" disk drive, plus-D interface, copier word processor. Worth £300, sell for only £150. Will split up. Telephone Jones 081 876 5304 after 5pm.

PETE'S PD Copy Service
★ Amiga PD Shareware £1.25 per disk ★
● UTILITIES/GAMES ● DEMOS ● MUSIC●
Phone for catalogue details
No membership fees. 1st class return of post, same day service, no hidden extras
TEL: 081 855 1503 (10-4 Mon-Sat)

ATARI ST520FM four months old. Very good condition, with original packaging with mouse, magazines and £50 of software. Will sell for £300 o.n.o. Phone Sheffield. 746331 buyer must collect.

SPECTRUM +2 with two joysticks, magazines loads of games, including Golden Axe, Rainbow Islands, and many more £180. Phone 0709 864601. If interested, Gameboy, three games, two player lead £90.

ST GAME clearance. All originals, 9 full price games, 2 compilations, 5 budget includes Paradroid, Chase HQ, Italy 1990, cost £320. The lot £80. Phone Lee (0235) 815732 (Oxfordshire) evenings.

VARIOUS computer magazines: postage only: send SAE to Craig, 56 Downland, Two Mile Ash, Milton Keynes, Bucks, MK8 8HN (N.C.E.) ST Action ST user ST/Amiga Format ACE TGM etc etc.

MIRACOM WS2000 modem and lead for Atari ST. Works but needs manual! only £35.00 o.n.o. Craig, 56 Downland, Two Mile Ash, Milton Keynes, Bucks, MK8 8HN.

MULTIFACE ST only two weeks old. Bought in error! £25.00 write to: Craig, 56 Downland, Two Mile Ash, Miton Keynes, Bucks, MK8 8HN.

LAPTOP computer for sale, RRP £2500. 32Mb hard drive, EGA

MEGADRIVE (Scart) +5 GAMES, Super Monaco GP, Hellfire, Insectorx, Thunderforce 11+ 111, runs both British and Japanese Carts, ■ real bargain at £160, Phone Lincoln 0522 531800.

AMIGA A500 + £500 of games +2 joysticks and 2 disk boxed. All for £400. Tel: (0622) 861583 (Kent) phone after 7.00pm.

40MHZ OSCILLOSCOPE dual beam, brand new, complete. Also 20MHZ Oscilloscope brand new, offers. Digital storage adaptor 20 MHz works with any Oscilloscope or on computer IBM compatible, boxed, offers. Details/ evenings 061 633 0824.

CVLS, 92 Firtree Estate, Thurgoland, Sheffield, Yorks S30 7BG Tel: 0742 884183. Open to 10pm
★ SPECIAL OFFER ★
3.5 inch disks (DS/DD) with labels only 32p
AMIGA PD - ONLY 99p per disk
★ OVER 900 DISKS AVAILABLE ★
Send for catalogue disk - 80p
Mouse Mats - Disk Boxes - Printer Ribbons - Amiga/ST Disk Drives
PHONE FOR DETAILS

EAZILINK software. For PC(?) offers (no use to me) Craig. 5 Downland, Two Mile Ash, Milton Keynes, Bucks, MK8 8HN 51/4 disk only.

PC SOUND BLASTER Sound Board VGC, hardly used £95. Amiga 2000, ■ meg RAM board, ■ meg, populated, never used, boxed £150. Re-advertised due ■ time waster. Tel: 040377 545.

286 FOR SALE, Herc screen, 20meg drive. 51/4 floppy. Small footprint, expansion slots for full length cards and half cards. £550 o.n.o. Steve 0268 543889.

PCW SOFT/HARDWARE Video Digit £45, Startrac + Kempston interface £12, Mallard basic manual £6, datafax and stationary £13, Scratchpad + £12 easy labeller £10, Tas-Sign £10, sidewise £6, offers? 0274 487870.

GAMEBOY. Mint condition, boxed as new, with Tetris, Double Dragon, Tennis, Golf worth £135 sell for £70. Tel 0323 767065 evenings. Also Amiga Powermonger, perfect condition £15.

SUPER Famicom cartridge. Great battle, mint condition, brand new unwanted gift. Cost £48. Sell for £25 including p+p. Tel: 0323 767065 evenings.

COMMODORE Soft and hardware. Tape and disk. Good condition. Really cheap. Going quick, if interested then write to: Paul Larkin, 41, Hatfield Crescent, Grovehill, Hemel Hampstead, Herts, HP2 6DA.

Let this advertising space work for YOU!!

For Only £61

Contact Tim Partridge on 0225 442244

TESTBOOM LTD - Tel: 0695 571605
286 from £600
ST's CALL
Atari TT's available

REPLAY 8 new, unused. Free sample disk, lead, thirty magazines + disks. Total only £75, if interested then write to: Paul Larkin, 41 Hatfield Crescent, Grovehill, Hemel Hampstead, Herts, HP2 6DA.

NEXT CUBE with 400dpi laser printer, rewritable CD, software includes Impron, Wingz, Media Station, unwanted bon us. £3000 o.n.o. Phone Jon: (0476) 68003 after 10pm

ATARI 520 STFM £200 1040 STE with business software pack £320. Mega ST4 4Mybtes RAM £550, post anywhere in UK. Some software, cyber paint utilities plus GFA basic (0209) 860510.

STFM D/S drive. Software controller, mouse, sound speaker system. £210 o.n.o. Medium REJ RGE monitor with ST lead also suit Amiga btc £95 (0209) 860510.

ATARI MEGA 4 computer with 40 Megabyte hard disk, Hi-res monitor, SLM804 laser printer, Calmrs, Outline Art, Logistix, Superbase Professional, Sage Accountant, plus (manuals). 5 days training. £2500. 071 435 2384.

ATARI 520 STE IMB turbo pack , boxed as new. Two months old, Atari SM124 monitor as new £350.00. Tel 0689 858317, Orpington area.

AMIGA Roger Rabbit and Ferari Formula one (won't work with 1.3 kickstart) £10 for both or swap for Lemmings or F-19 Stealth Fighter, originals. Tel: Viper 0473 713715 between 6-9pm.

AMIGA Agnus (8371) chip £20. Kickstart 1.2 chip £15. Amiga Mouse and holder £10 or swap for original Lemmings or F-19 Stealth Fighter. Tel: Viper (0473) 713715 between 6-9pm only.

WATFORD Electronics Aries PC/XT system 6, 640KB 51/4 F/D 40Mb, fix disk 2 serial 1, Parellel Port Paradise card, ega colour monitor (£300 software) inc DTP word processor sale due to ill health. Phone 0983 298699 £725 o.n.o.

PRINTER PAPER - size 11x 370mm - quality 60G.S.M. - QUALITY 2000 sheets per box (3 boxes only) £10 plus p+p each. Phone Tony on 0705 823470

COMMODORE 64, Dattasette, P.S.U. and some software. Immaculate condition £120 o.n.o. (the wife wants a car so the computer has to go). Phone Henpecked on 0705 823470.

FOR SALE Kings Quest I, II, III, IV, also Manhunter and Dungeon Master all originals £70 the lot. Ring and ask for Mark.

AMSTRAD CPC6128, disk drive, colour monitor, Multiface 2, data recorder, computer desk. 30+ games. 20 blank disks. AA magazines 28-67, dust covers, manual, £475 buyer collects. Contact Dougie. Tel: (0208) 814804.

COMMODORE PC10. Dual 51/4" floppy drives. 40 meg hard dirve, enhanced colour monitor, genius mouse, Citizen printer, 6 months old. Perfect condition, £700 with printer. £600 less printer. 0691 654482.

COMMODORE 64: World Cup Edition less than eight months old with two joysticks, plus over £50's worth of games including Kick Off 2, Chase HQ, Turbo, Outrun etc. Hardly used £115 o.n.o.

PSION XP 32kb, formater, AC adaptor, Comms Link, Leather case, 64, 32KB, data packs spell checker, travel pack, spreadsheet, PC developer, cost £497 take £350 all manuals included. 8am to 5.00pm.

LYNX with California games, Blue Lightening, and Gates of Zendocon. Boxed with accessories. 10 months old. Excellent condition. Sell £115. No offers. Phone Lee on Plymouth 0752 705280.

BBC-B micro, aries 32k RAM expansion, dual double sided drive, 40/80 swithchable Microvitec 653 colour monitor, manuals, leads etc. £380 o.n.o. Tel: 0782 271302 evenings.

ST SOFTWARE All originals. Castle Master, Interphase, Kult, Drakkhen and more! From £2-8. For details, send a SAE to:-Sony stereo recording walkman, WMF-2097, features Auto Reverse, Dolby, plus digital radio RRP £150, sell for £105. Boxed, 9 months old, under guarantee. Phone Lee on Plymouth 0752 705280.

TECHNICS prtable CD player. Excellent for sound digitizng inc power adaptor for car lighter. £90. Call pete Tel: 833495.

ATARI portfolio plus 32k RAM card and parellel interface £130. Tel: 0234 226866 days, 0280 815970 evenings.

520STFM boxed, excellent condition. 30+ games including populous, Kick Off2, Bomber, Simcity with mouse, Quickshot 2 joystick, blank disks, manual. Bargain at £310 o.n.o. Phone Paul 071 328 7598 (weekends please)

TWO complete Spectrum packages. All you need. Each worth over £250. Best offers around £65 secure. Buyers collect pay postage. Phone Duncan for details on (0252) 547911 (evenings) (Farnborough, Hants)

ATARI ST with single sided internal drive for sale. Needs some attention and new internal drive. Only 3150. For more details please send SAE to: 30 Clifford Street, Birkenhead, Mersyside.

ATARI ST Hi-res mono monitor for sale. Ideal for word processor, excellent condition. Complete with dust cover. A bargain at only £75. SAE to:- 30 Clifford Strret, Birkenhead, Mersyside.

NINDO NES +5MBI +I, +2 other games (boxed) as new, no reasonable offer refused also PAL PC Engine +5 games, again make an offer. Write to R. Kemp, 4B Current Lane, Harwich, Essex, C012 3DE.

SCULPT Animate 40, professional animation software, cost £400, will sell £195 or swap for video digitizing set-up. Open to offers. Speaker system for Amiga £20 o.n.o. Tel (0772) 58851.

DATA transfer boxes 2 way £12.00, 3 way £14.00 4 way £16.00 Only one of each. Telephone 0709 770297 and ask for Aido.

PRINTER CABLES, 36 male to 36 male, 25 male to 36 male. £5.00. Cables or ribbon cables available. All cables are fully screened. Telephone 0709 770297 and ask for Aido.

MICE, good quality 200 dpi, available for Amstrad PC, Amiga or Atari ST. £12.00 each. Telephone 0709 770297 and ask for Aido.

TYPECAST PDL catalogue isue2.0 new available DTP, word processor, Art and Clip Art. Send disk + SAE. No games! To typecast PDL. 31 Hartfield Crescent, West Wickham, Kent, BR4 9DW.

PSION LZ, £100 brand new also accesories i.e. printer II, £120, datapacks etc, also psion inc 600, £900 brand new, contact Victor 081-807 2906 or 0831 606745 anytime.

SYNCHRO express for Atari ST £20. Devpac ST Assembler £20, F-29 Retaliator £10, Anarchy £5, Archipelagos £5, Balance of Power £5, STOS £10. Telephone (0375) 851706, after 7pm.

SONY DISCS

PERFECT FOR AMIGA AND ST

10 3.5" discs only.....£6.00
25 3.5" discs only.....£12.50
50 3.5" discs only.....£22.50
100 3.5" discs only.....£40.00

ATARI ST PUBLIC DOMAIN CATALOGUE £1.00

mph COMPUTER SPECIALISTS LTD
10 CHANDLERS COURT
EATON, NORWICH
NR4 6EY
Telephone: (0603) 503382

ATARI STE 0.5 meg memory upgrade, £25. Third Coast technology 20Mb hard disk drive for use with STE £185 o.n.o. Telephone (0375) 851706 after 7pm.

PC SOFTWARE for sale - Wordstar 2000+, GEM presentation team, Wordstar professional deluxe paint 2, Cocument DOS XM, all boxed originals. Phone with an offer on 0734 509527 (Berks)

MEGADRIVE plus 8 games, including Strider, Gynoug, Populous, John Madden and more worth £420+ sell for £260 o.n.o. Tel John on (02222) 489033.

TWO QL'S. plus 3.5" disk drive, Eldersoft mouse with ice frontend, colour monior, 40 disks, 73 MDV's, complete outfit. £250. Too much to post. Buyer collects. Tel: 081 889 4276 Tottenham.

C64 DISK software, Easyscript word processor, £8, Superbase, £8, Stop Press DTP, £12. Instant recall database, £6 plus sound expander cartridge £6. Phone (0302) 361606 after 6.30.

MANY computers MS-DOS word perfect etc, £2 each, plus postage send. SAE for list to, Tom Combe Rise, Luppitt, Devon, EX14 or ring 0404 891806.

ALL COMPUTER HARDWARE AND SOFTWARE WANTED FOR CASH OR EXCHANGE

NOTHING REFUSED!!

071 221 1075

LASER printer HP compatible. New, boxed. 6pm. 6 resident fonts. 512k memeory expandable to 4.5Mb. 300dpi 150 sheet feed tray. Additional 400 sheet feeder £499. 061 427 5616.

COUPE', disk drive, power cable, DOS 2, Tasword, Defenders Earth (disks). 4PD and 16 more. Utilties and Spectrum software, worth £550. Any offers? Tel: 0789 764039. Andrew Stanford, 15 Fields Park Drive, Alcester Warwicks.

AMIGA games for sale. Football Director 2, Operation Stealth, Football of year 2, Greg Normans Golf, Prince of Persia. £60 or swap for good modem, for Amiga. phone (0243) 583669 anytime.

AMIGA project v4.2 £43.00. Amiga musicx full version £45.00. Both originals. Tel: (0562) 747847.

OVER 200 computer magazines for sale including many Aces, AF C+UG, TGM, CU and several first issues. £50 for the lot. Tel: 0925 75 4175.

SEGA MASTER system, boxed and in excellent condition, with all accessories and 2 games. £50 o.n.o. Light Phaser and Rambo III. £25. Phone Tim on 081 464 2104.

ST SOFTWARE bonanza! Over £500. Mark Williams £45, STOS £15, Falcon £12, FSII £15, Hisoft basic £39. Also books and multiface ST £15. Phone Paul (0744) 35918 for list.

AMIGA PD: over 150 titles and quickly growing. Catalogue disk has magazine and PD on it, send £1, p+p free to : Paul Harthen, 43 Boyds Walk, Dunkinfield, Cheshire, SK16 4AX.

BRENLEE PD

8 Kings Road, Shepshed, Loughborough, Leicestershire, LE12 9HT

★ For the best in Amiga PD write for catalogue ★

ATARI 1040 STE , mint condition, only four months old £325 will accept STFM or DOT Matrix printer. As part exchange. Also business software pack for sale £50. 0623 861158.

MODEM-MIRACLE WS4000 v21/23, original packing + manual, with ST connecting lead, £75. 28 back issues of "Atari ST user"- offers? Phone Mike on 0332-810785 (Derby area).

24 PIN printers. Canon A60G, Amstrad LQ3500, good condition. Phone 031 443 0185 evenings.

AMIGA Hard Drivin II £10, Lotus £10, Stunt Car £5, Falcon £5, Powerdrive £5, Crazy Cars II, £5, Fast Lane £5. M. Sutton, 8 Heol Cledday, Waunarcwydd, Swansea, SA5 4QF.

AMSTARD CPC word processor (Protext) and assembler/dissambler (Maxam 1.5) both on ROM on Rombox with full documentation only £40. 081 669 6093.

IBM P52 70, 120 Mb hard disk. New in box £350. Call Phil on 0279 651043.

ATARI ST compact demos disks by "The Source", send SAE to:- Graeme, 7 Collery Green Drive, Little Neston, South Wirral, L64 OUA, Greetz to all contacts and groups.

ALAN SUGAR Amstrad Story Book by Thomas £7.95, Windows Book by Sinclair £7.95, Virus Killer Disk 3.5" for IBM/Clone £7.95. Din, 4 Trelawney Drive, Tilehurst, Reading RG3 5WQ.

AMSTRAD 1512 DD, mouse, GEM, GEM Write, Paint, Draw, Basic, Locoscript, Mallard Basic, Logo, Pascal, Tutorials, Games, Manuals, Boxed, £250 o.n.o. Phone Mike 0705 591037.

AMIGA 500 with 1 meg upgrade Cumana 2nd drive Rascal U22 modem Amstrad 3610 printer all with leads and manuals plus software and joystick £500.00. May split. Phone Tony 0375 380660.

MEGADRIVE Scart (takes all carts) plus nine games and two joypads, including Mickey Mouse, Strider, Magical Hat and Batman, sell for £280 o.n.o. Telephone Martin 0685 76361.

AMIGA brand new 12 mths guarantee . Software including Photon Paint 2, C- Light, 3D animation, demos. £400. Ring 081-961-3758 between 10am and 1.30pm only. Ask for Linden.

AMSTRAD PC1640 ECD SD (360k), mouse DOS, manuals, techinal reference, keyboard cover, £425 call Robin: 0273 698059 after 6pm.

AMIGA brand new 12mths guarantee, screen GEMS pack plus PD. Software all for £250. Ring 081-961-3758 between 10am and 1.30pm only. Ask for Linden. Monday to Friday.

TOTAL PD. Public Domain for the ST. Send a SAE to Chris Palmer, 27 Stanmer Villas, Brighton, East Sussex, BN1 7HQ. We sell, buy and swap PD. Sends us your lists.

Byte Syze

Byte Size Prices On Those Hard To Find Items

AMIGA/ATARI		GENERAL	
Mouse/Joystick Switches - Auto	£17.50	Joystick Extension leads (3m)	£2.99
Mouse/Joystick Switches - Manual	£15.50	Monitor Sharer - Switched	£14.75
Mouse/Joystick Extension Leads - Pair	£3.99	Monitor Leads	from £6.75
4 Player Adaptor	£4.99	Parallel Printer Leads	£3.75
3½" Disk Drives 1Mb	£67.95	Midi Leads 3M	£2.50
Contriver Replacement Mice + Mat	£21.95	Dust Covers	from £3.95
Intro To The Amiga Video	£9.99	5 Watt Stereo Amp + Speakers	£39.99
Midi Interface 1 in, 2 out, 2 Thru	£25.50	Atari Mono/Col Monitor Switch	£19.99
25 Bulk 3½" DSDD disks inc. labels	£9.50	25 KAO coloured 3½" DSDD disks	£11.50
Atari Lynx (no game)	£79.00	Lynx Games	from £26.00
Sega Megadrive (UK) with game	£179.00	Megadrive Games	from £29.00

Many More Items for Acorn, Amstrad, Atari, Commodore and Spectrum Computers

IncludesVAT at 17.5% P&P £1.00; except on videos and disks which are £2.00. Cheque (card no. on reverse) or Postal Order with order, payable to:-

BYTE SYZE, 23 Porter Close, Rainhill, Merseyside, L35 6PY
Ansaphone 051 426 0138; Enquiries 1700 to 1900. Phone or SAE for FULL list.

SPECTRUM 48K C/W Concom joystick interface, Stonechip Echo amplifier. Data recorder. Joystick and leads. Manuals and basic learning guides. £30 only. Buyer must collect. Tel:- 081 889 4276 Tottenham anytime.

ACORN Electron, plus 1 interface, joysticks, Taxan green screen, monitor, games £70. Phone 0383 822832.

2 20 MEG hard drives for PC, + XT controller card. £180 o.n.o. Phone Simon - 021-459-0800 evenings or weekends.

HYUNDAI PC/XT for sale; inc: 20 meg hardcard, 31/2"/51/4" disk drives, 640k, RAM, A4 mouse,

COMMODORE 64 software collection (cassette). All £1 each! All originals. Free software with every order! Only one of each! First come, first served! Also Vic-20 s'ware. SAE for lists. Tel: 061 737 6912.

RICHO RP1600 printer DEC RK07 drive TS11 tape deck green screen monitor suit BBC RL02 10Mbyte cartridges plus many BBC shares etc. Offers, 0737 551090.

CITIZEN sheet feader, good condition, was £74.95 will sell for £30. Ring Wells (0749) 769250 after 5pm. Also looking for good 2nd hand printer £150 tops for Amiga 500.

A500 1meg 2nd drive plus Vorter 40meg HD with leads Ecs ie, Fatter Agnus, for only £450 will split A500: £200 Vortex HD £300. Contact D. Tweedie, Hms Harworth, BFPO ships, London.

AMIGA 500 , still boxed, over £650 worth of games. 2 joysticks. Immaculate condition. Worth over £1000 sell for only £550. Phone James on (0206) 384019 after 6pm. Thanks.

MAGAZINES for sale ST Action from issue 1, £1 each +p+p. PCW from 1985,£1.20 each+p+p. Also wanted ST PD. Phone 0734 733757 7pm-10pm. Ask for Neil.

APRICOT F1 PC 720k disk drive, 9" monitor, cordless keyboard. Lots of software, and manuals. £120 for quick sale. Phone Jon 081-946-9472 evenings.

NEO GEO for sale with NAM 1975, majician cord, joystick, memory card, power pack (Scart) £400. Call Scot on 0422 206191.

MACINTOSH Microsoft 'Works' intgrated word processor, spreadsheet, database and comms. Pack includes 'Quicken' cheque account management programme. Unused with all manuals. £100 o.n.o. Ring Jon 081-946 9472 evenings.

MANNESMAN Tally printer MT 85 Ex Con £115. Tel: 051 428 5674.

ATARI 520STFM plus 1/2 meg upgrade excellent condition, Atari hi-res mono monitor (sm124) PD software ▮▮ for £300 o.n.o. Open to offers though for quick sale (reasonable) Tel: 031-334-8919 now.

ATARI software Fleet Street Pub 3 brilliant DTP program as new £80 o.n.o. Protext versions, unwanted gift £55. Turbo ST £10. Tel:: 031 334 8919.

AMIGA A500, printer, 2nd drive, original software, minigen, modulator etc only £450.00 o.n.o. Also magadrive, Scart, 18 games, 3 joysticks only £350.00 o.n.o Phone Doncaster (0302) 750262 after 6pm.

DAISYWHEEL printer Silver Reed Exp 600 parellel interface, cables, spare ribbon. VGC hardly used. Around £200 for quick sale. Phone Jon 081-946-9472 evenings.

AMIGA A500, 1meg 2nd drive, modem, two joysticks, loads of PD an a few originals £450. Tel: (0533) 551049.

MEGADRIVE games (British) all new. Pace Harrier II, £18. Rambo 3, £18. Truxton £18. Super Thunder Blade £18. Altered Beast £15. or £75 for the lot. 0746 766897.

EPSON PC-E computer, 20Mb ard disk, mono monitor, MSDOS 3.3, user pack, just three months old, boxed as new, £590 buyer collects (Kent), Phone (0795) 872280. Also Nintendo Gameboy as new £50.

COMPUTER REPAIRS
★ FREE ESTIMATES ★ 12 MONTHS WARRANTY ★
Amstrad, Atari, Commodore, Sinclair.
Monitors & Printers, Amiga & ST Specialists
Fixed Labour Charge + Parts & Carriage
★ STFM/E/MEGA POWER SUPPLY REPAIRS £30 ALL INC. ★

COMPUTER SPARES
Parts & Service Manuals for
most makes of Computers, Monitors & Printers
All services & goods supplied subject to our terms of trade

GJS COMPUTER SERVICES
37 Bamford Street, Clayton, Manchester M11 4FE
(Callers by appointment only)
Tel: 061 231 6608 Fax: 061 223 7531

SAM COUPE AND SPECTRUM MAGAZINE!
PROGRAMS, UTILITIES, INFO IDEAS! NEWS, REVIEWS AND HOMEGROWN SOFTWARE
"OUTLET"
GRAPHICS, AND HELP PAGES, SERIOUS SOFTWARE
MONTHLY SINCE 1987!
SPECIAL OFFER! Latest issue £2.50 to newcomers on:-
+3, DISCIPLE/+D, MICRODRIVE, OPUS, TAPE, SAM DISC
CHEZRON SOFTWARE, 605 LOUGHBOROUGH RD., BIRSTALL, LEICESTER LE4 4NJ

AMSTRAD PPC 5125 portable PC, new manuals, leads etc. Never used £250.00, ring Pete Letchworth: 0462 684995.

ATARI ST originals: Operation Wolf, Falcon, Outrun (with soundtrack tape), Where Time Stood Still, Marble Madness, Elemental. £5 each (all boxed). Phone Steve 0530 243096.

FOR SALE Atari ST FM discovery pack, standed pack, o.n.o. £250. STOS, first basic Neochrome and 4 games (Carrier Command, Space Harrier, Outrun Bomb - Jack) + joystick and more games. Tel Oxford. 243365. Azeem 4pm-9pm.

ATARI ST orignals for sale, Virus Thrust, Elite, Lancaster, Stac Archipel, Goldrunner, Cards, Chamonix Challenge, £5 each. Also PD wanted. Phone Neil. 0734 733757, 7pm-10pm.

C LANGUAGE, Turbo C, C++, Pascal, Turbo Pascal language tutorial disks for IBM or Clone £9.95 each M. Din, 4 Trefawney Drive, Tilehurst, Reading, RG3, 5WQ.

ATARI 520STE 1meg memory external drive Blitz Turbo Copier Replay 4 Sound Sampler, Software Batman Falcon etc. Loads Magazines. Sell £450. Contact Andrew Colchester (0206) 864573.

BARGAIN! Spectrum +3 and Amstrad 2160 printer, many games, disks, word processor and two joysticks. All leads supplied. Will spilt if your'e desperate. The lot for £120! Ring 0483 771769.

FOR SALE. Amiga games, Singles A Books, and magazines - Ace, New Computer Express, The Games Machine, Your Amiga, Zero. Contact Andrew Wong, 10 Gerllan, Tywyn, Gwyneod, LL36 9OE. Tel: 0654 711122.

COMMODORE 64C, disk drive, joystick, disk and tape software, magazines, disk notcher: no splitting, quick sale! GEOS, Geopublish, mouse, 512k RAM: £160. 5 Dobson Place, Inkersall, Chesterfield, Derbyshire.

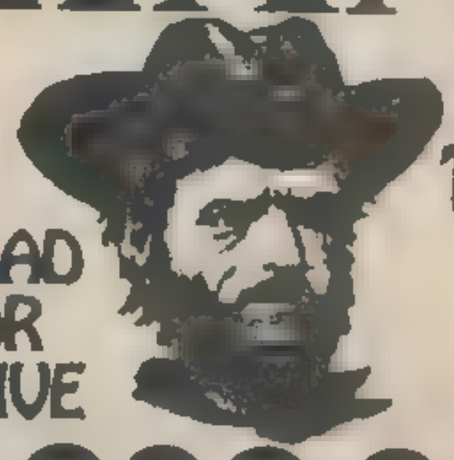
SOME great Amiga originals boxed titles, immaculate condition! Very fair prices, quick answer SAE, 13 Bournville Lane, Birmingham, B30 2JY OR Tel: 021 459 7576. Also fast PD swaps wanted!

PC DITO for Atari ST for sale. Brand new. Still in cellophane wrapper. Cost £79, but will accept £50 o.n.o. Phone Fraser on 031 553 2356 for details.

ST ORIGINALS - for sale due to timewasters many at £2.50. Also PD library (300+) disks £200 - mastersound sampler £15 midi contacts wanted. Phone 0742 425525 (Ian).

ST 520 upgraded to one meg memory, one meg Cumana drive massive software collection, joystick, bound magazines, many many extras £375 for further information. Phone 0482 571088 ask for Steve.

WANTED



USE YOUR VOICE TO OUTDRAW THE GUNFIGHTER
DEAD OR ALIVE
CASH PRIZES
0898 31 35 94
INFODIAL POBox 36 LS1 4TN Call charges 33p Per Min Cheap 44p Per Min All Other Times

ATARI 800XL with 1050 disk drive and £200 of software, books and cartridges. £165 o.n.o. Atari 1029 Dot Matrix printer £60 o.n.o. or £200 o.n.o. The lot. Tel: 0935 706972.

MAGAZINES (with disks) ST Format issues 8-20, ST user issues 53-61 £1.50 each. Wanted " Mapping The Atari". Ring 0420-88462 or 0822-852796.

AMSTRAD 464 games must be won! Win 40 Amstrad games in a raffle to be held on 15th of April. Tickets 20p each, send name/address/ money. ▮▮ Romney Close, Little Neston, South Wirral, Cheshire, L64 9RJ.

SPECTRUM 48K+ including software etc £45 Spectrum 18k+ including software etc £85 two microdrives and 20 cartridges £30 Spectrum books, magazines etc. Phone Steve 081-517-6772 evenings.

ATARI SF314 external disk for Atari ST, all leads, £30 o.n.o Tel: 041-339-4719.

C64C, 1541/II disk drive, 3 good utility cartridges, two joysticks, loads of disk games, best offer or swap secures. Tel: 041-339-4719.

SEGA Mega Drive with three games only 2 months old. Sell for £140.00 Also PC engine with five cards £150.00. Phone Keith before 3pm after 9.30pm. 051 9312 4673.

For sale: One Olivetti 20/25 Q3 with ledger card handling, floppy disk, new screen and printer, including software for building contractors, if required. ***£600.00 O.N.O.***
Telephone No: 0633 257406 office hours.

INK-JET PRINTS TO T-SHIRTS IN FULL COLOUR

4 SHEETS £10.00 inc VAT and carriage, Club logo etc printed in full colour onto your t-shirt, tie, cap or even put your Mother-In-Law on your underpants. Just print and iron on.

RAINBOW COMPUTERS

1A Hinckley Road, Earl Shilton, Leicestershire. Tel: 0455 840106

Payment required with order

DELL Dell system 220 IBM 100Mb hard disk VGA CO 1.48Mb inc colour monitor, DOS PAC plus original manuals £2299. Excellent condition 081 459 8800. Ask for Martin O' Donnell between 10am to 7.30pm.

AMIGA games Drakhen, Treble Champions £6 each, Edition One Compilation £9. All boxed. Back issues N.C.E., Amiga computing, Amiga User etc. 65p- £1.10p includes posatage. 0703 676949 after 7pm.

ANY info on advance 86B ie. DIP switch setting, upgrade wanted E.J Sparrow Hull. Please contact me as soon as possbible. Please ref letter in copy II? Tech tips. Write to Mr. Cassidy, 63 Flodden Way, Low Grange, Billingham, Clevehand TS23 3LQ.

AMSTRAD PPC 5125 portable PC, new manuals, leads etc. Never used £250.00, ring Pete Letchworth: 0462 684995.

MEGADRIVE CARTRIDGES

Mickey Mouse	£25.95	Magical Hat	£25.95
Crackdown	£25.95	Shadow Dancer	£25.95
Strider	£29.95	Hellfire	£22.95
Wonderboy III	£24.95	Dick Tracey	£32.95

TEL (0736) 50130 for details of other titles, or ask for a full price list.

We also BUY SELL & EXCHANGE USED TITLES

Please make all cheques or postal orders payable to M.Conacher. All prices include p&p.
Send all orders to: Carts, 21 Reens Cres, Heamoor, Penzance, Cornwall, TR18 3HW

AMIGA A500 kickstart 1.3 still as new, boxed joystick and lots of original games only £315 or £350 with 1meg memory. Tim on 081 203 8373 after 6.30pm.

AMSTRAD PC2086 VGA colour 30Mb hard disk , 6 months old. Various software Supercalc Windows Crazy Cans 2. Home use only £750 o.n.o. Tel Aberdeen 0224 696172. Will pay for delivery UK.

SUPERCHARGER, PC emulator for Atari ST with 1meg. Internal RAM, and TC. Power which enables you to use the ST's internal RAM, Call Hakan on: 081 533 2188.

AROUND 1000 disks of PD for Atarii ST/E for sale or exchange. To retrieve D.S. catalogue disk dend SAE and disk to A.U.G, 27 Rosslyn Terrace, Edinburgh, EH6 5AU.

ATARI ST-1meg memory drive. Software includes: STOS, Hard driving, Space Harrier, Colossus Chess X etc. Sell for £280 o.n.o. Phone Chris on: (0603) 715 023.

◆ GOODS WANTED

BROKEN Amiga 500 wanted any condition considered. Tel: 0778 393470 ask for Peter Smith.

WANTED Amiga 500 + printer with or without S/W. With 1meg prefered. Swap for super Famicom with F-Zero (PAL) version or £290. Please ring Stephen on (0294) 407919 (day)

SWAP my Atari 52DSTE with 1meg memory and loads of games, disks and magazines for your Amiga. Phone 0283 224649 and ask for Mike.

WANTED light pen and colour monitor MT644 for Amstrad CPC 6128 or will consider very cheap complete colour outfit (pensioner) 061 775 8444.

WANTED any info or manual for Duaneo word processor with twin 51/4" disk drives. Wide printer, 8" green monitor, All integral. MOdel F85. Phone 0744 27067.

36p inc VAT

3 1/2" Disks inc Labels - DS/DD 100% Error Free - fully guaranteed 2 for 1 replacement

P&P: 50 disks & over is free. Under 50 disks only £1.50
All prices include VAT. Send Cheques or Postal Orders to

KYC Disks

Shop now open: 9 Barmouth Rd. Tel: 081 877 3738
51 Barmouth Road, Wandsworth, London, SW18 2DT.
Telephone 081-870 0469

WANTED Atari 8-bit games on disk will swap sell plus books. Wanted any for the Atari XL/XE. Contact Dean 138 Townsfiled Road, Westoughton, Nr Bolton BL5 2NT. Tel: 840725.

INFOCOM advs, Hitchhikers, Shogun, Battletech, Sherlock, Zork 3, Wishbringer, Borderzone, Bureaucracy, no budget versions, must be complete, will pay up to £5 each. For Amiga or ST. Telephone Geoff 0705 412024.

B/W VIDEO camera for use with digiview. Tel: 081-429 0882 (NW London).

WANTED Amiga A500 + extras s/w, or 1/2 meg +2nd disk, will swap for brand new super Famicom + F-Zero, 2 joypads. Best deal secures. Please ring (0924) 402430 at 4pm.

ST/STE PD — Ripped-Off! Demo CD's — Catalogue available for £1.00

Over 90 of these world-famous Demo CD's available
The easiest way to enhance your Demo collection!!
Ripped-Off CD's cost £2.50 each ONLY from Caledonia
Hundreds of other PD/Shareware titles available
NEW catalogue out NOW for £1.00 or a blank disk

Caledonia P.D.L.
250 Oldtown Road, Hilton, Inverness, IV2 4PT.

C64 CONTACTS wanted interest mainly games tape or disk, 100% reply. Phone Dave: 0253 41015 after 7pm.

WANTED Mac plus. Must be in good condition. Cash waiting. Phone Graham on 0705 599603.

WANTED: player manager for Amiga. Will buy (reasonable price), or swap for other games or PD. Replies by post only please to: Tim Mitchell, 24 Albany Road, Blackburn, Lancs, BB2 6EQ.

WANTED Teletext adaptor tuner for Commodore Amiga with 10845 monior. Phone Blackpool: 0253 46110 will collect or pay postage C.O.D.

WANTED 2" floppy disks, must be suitable for use with a Zenith minisport computer. Tel 021 308 4775.

WANTED 40/80 track 5.25" disk drive for BBC model B. Prefer built in P.S.U. Cash waiting. Phone 0532 869425 ask for Michael. Also wanted BBC user guide. Cash waiting, please phone now!

AMIGA PD wanted , utilities anything at all. All disks sent will be rturned with new pd copied onto it. Martin Underdown, 40 Hinderwell Ave, Redcar, Cleveland. TS10 SEH.

ST SOFTWARE! Drakkhen, Castle Master, Kult, Interphase, and many more! All originals from £2 - £8. For info send SAE to:- Mike Norton, Collingdale Nurses Home, Colingdale Hospital, Colingdale, London, NW9,

URGENTLY NEDED. Speedtrans, Nirvana, Multiface II. Also R-Type, Turrican, X-out, Klax, Stormlord, Purple Saturn Day. For Amstrad 6128 will also pay postage. Selling any other arcade style games? Please contact: John Mcpherson, 29 Dunpender Drive, Happington, East London, Scotland, EH41 3BN.

COMMODORE C128 software required. Business games utilities PD. Please contact Ken Marshall on Stevenage 359183 eves or 0462 816406 daytime.

WANTED for use on QL. Hard disk, interface, mouse +I/F. Eprom Programmer. Ring Steve on 0282 51854. Also QL contacts wanted.

WANTED, computer and hardware for registred charity. Cornwall's Air Ambulance. Free or cheap. Contact 0840 223574.

MODEM SM2400 Amstrad wanted for ST. Call John on Derby (0332) 840622. A genuine fone freek request.

WANTED, tape request for Acorn Electron. Any title, old or new. Also cheap disk drive/interface required. Send details and price list to: Mr. W Watts, 134 Great Knightleys, Basildon, Essex, SS15 5HQ.

ANY PATCHES, editors for TGSS and KI Syths, for Amiga. Also any utilities, will swap. Phone Graham. 0522 531800.

URGENTLY require quality Midi software for Amiga, such as Music X or others, in exchange for Amiga games software, or cash. Please ring Tony. 0703 440084 anytime.

FOOTBALL prediction programs, wanted for the Amiga or any other prediction programs, as cheap as possible. Or swap Head Coach and Football Director II. Ray Nurden, 6 James Street, Newport, NP9 2GZ.

SERIOUS Amiga music contats wanted. Especially Roland D5 owners! Tel: 0272 837252 ask for Simon.

WANTED Atari SM124 Hi-res monitor, must be in good working order with box. Edinborough. 031 661 2639.

WANTED, Star colour printer or Okimate 20. Will buy or swap for DP Bodytone Multi-Cym rowing machine. Will collect/delivery in reasonable area. Ken 0268 793973 (South Benfleet, Essex).

MEGA DRIVE games for swap, inc Mickey Mouse, Eswat, Sword of Vermillion, Ghost Busters, Herzo - ZWEI, Altered Beast. Phone now! on (0722) 326057.

COMPUTERS

For probably the best prices and deals on Home and Business Computers, Acorn, Archimedes, Atari ST's, Lynx, Commodore 64's, Amiga's, Amstrad, Star, Citizen, Canon, Panasonic, Sega, Nintendo Consoles Plus printers, disk drives, monitors, memory upgrades and accessories etc Great deals on PC's

* FAX M/C's * ANSWER M/C's * PHONES *
Joysticks from £4.99 Blank disks 5.25", 3.5" 3"

SGM ELECTRONICS

19 Charles Street, Wigan, Lancs, WN1 2BP
Tel: (0942) 321435 Fax (0942) 321435
Mon-Thurs 11.00am 9.00pm
Fri - Sat 11.00am 7.00pm or later
Repairs to most makes of computers

TWIN 5¼" DISK DRIVES. A nicely cased self-contained unit with its own power supply. Product of a famous Jap maker this is IBM compatible 360K twin double sided. Brand new with data £59.00 plus £3 delivery.

3½" DOUBLE SIDED DOUBLE DENSITY DISK DRIVES by the famous Japanese EPSON Co. All these models in stock with makers data: SMD240H, SMD280H, SMD240L, SMD180B. Also 5¼ models SD540 & SD580L, all brand new and will work with most computers and offered at £39.50 each + £3 delivery.

3½" DOUBLE SIDE NEC disk drives still available but not many left, will work with the Atari ST etc. £59.50 + £3 delivery.

AMSTRAD 3½" DOUBLE SIDED DISK DRIVE IBM compatible, with case Ref FD9 £45.00 + £3.00 P&P.

SUPER MULTITESTER Ex British Telecom, as new tested and guaranteed. Original cost probably over £50, yours for only £7.50 Leather case for this £3.00 + £3.00 post.

110 WATT POWER SUPPLY ASTEC switchmode, 230v mains Input:- 38v at 2½A & 5v 3A outputs, encased and fitted on panel mounting plate with mains input socket and on/off switch, made for use with computers. Brand new, price this is £15.00 post paid.

M & B Electrical Dept NCE,
12 Boundary Rd, Hove, Sussex. BN3 4EH.
Tel: 0273 430380 Fax: 0273 410142. Telephone orders welcome

◆ SERVICES

ELECTRONIC music and Jean Michel Jarre Fanzine issue four out now. Send SAE for info or £130 To Graham Needham, 75 Lavernook Road, Penarth, S.Glam CF6 2NY.

ANY Amiga software companies wanta good graphics artist to help with games, then phone:0705 256778 ask for Alan.

MEGADRIVE games for swap, inc Mickey MOuse, Eswat, Sword of Vermillion, Ghost Busters, Herzo-ZWEI, Altered Beast. Phone now! On (0722) 326057

◆ ANNOUNCEMENTS

MEGADRIVE swap your games through our National service, meet local owners. Send SAE £3 for six months membership. Megadrive Club Laurel Bank, Arthington Lane, Pool in Wharsdale Leeds, L521 1J2.

CRYSTAL juction B.B.S now on-line completely free no changes(ormaccy the project BBS) Now on (0384) 441929. All speeds 300/ H.S.T 24 hrs daily. Milands area, call now!

BUSINESS idea's wanted. ST owner with D.T.P. database, etc wants to start a small but profitable business, but lacks idea's. Offers of Help:- Mr. Ogden. Bertelin Road Stafford, ST16 633.

SOMEONE willing to help, new Amiga A500 owner, printer trouble amoung otther things. Please Ring 06973 31759.

◆ PERSONAL

AMIGA coder wanted to help me get started coding. I do have experience on 8bit CPU's. Please write I will answer all letters. 50 Foxhowe Coulby, Newham, Middlesborough, Cleveland, T58 0RU.

VGA compatible entertainment shareware for AT comatible PC's. Packed menu driven 31/2" 1.44 meg disks SAE for full list. W. D. Owen, 9 Ithens Way, Sontley Road, Wrexham, Clwyd, LL1 37EQ.

FREE PD?
RING FOR FREE INFO PACK!
WHAT HAVE YOU GOT TO LOSE?

FREEPHONE 0800 252 623
Or (051-924 0200)
(24 HOURS)

Diners Club International · Access · VISA

Or Post Free To
UNBEATABLE PRICES,
FREEPOST, LIVERPOOL, L23 0XH

ARKADIUM

P.O. BOX 15, NORMANTON, WEST YORKS. WF6 2YR.

ALL PRICES INCLUDE VAT AND POSTAGE

SEGA MEGADRIVE (JAPANESE)

Import Megadrive, PAL Version, with PSU and Joypad. Including one game, choose from ESWAT or RASTAN 2. R.R.P. ~~£180.99~~.
All for £149.99

CARTRIDGES

GHOSTBUSTERS	£32.99
ESWAT	£32.99
STRIDER	£37.99
FATMAN	£37.99
SHADOW DANCER	£37.99

Available now our newsletters for either Megadrive or Gameboy. For your copy send a stamped addressed envelope stating version required. **We also do Gameboy Super Famicom and Segs Game Gear**

FREE! Reader Ads Order Form

PLEASE TICK THE CATEGORY YOU WANT YOUR AD TO GO IN:

HELP OFFERED ☐ GOODS WANTED ☐ BUGS DISCOVERED ☐ EVENTS ☐
SERVICES ☐ VIRUS WARNING ☐
ANNOUNCEMENTS ☐ MINI-TIPS ☐ FOR SALE ☐ PERSONAL ☐

NAME _____ TEL: _____

ADDRESS _____

WRITE YOUR FREE AD HERE USING ONE BOX PER WORD IN BLOCK CAPITALS.

Send your reader ads to:
SHOPPING EXPRESS READER ADS,
MONMOUTH STREET, BATH BA1 2BW

Terms and conditions

- Sorry, NO trade ads. All reader ads must be from private individuals
- We cannot vouch for the quality of goods and/or services offered in this section. All ads are accepted in good faith.
- We reserve the right to amend or refuse reader ads at our discretion
- No pirated software may be sold through these columns. Any reader being offered non-originals should contact us
- We cannot guarantee that reader ads will appear in particular issues of Express
- The following declaration should be signed:

My advertisement conforms to the terms above and is legal, decent, honest and truthful

Signed _____

ASSEMBLY LANGUAGE PROGRAMMERS

REQUIRED FOR ORIGINAL AND CONVERSION WORK

WE ARE LOOKING FOR PEOPLE TO WORK FREELANCE FROM HOME, ON ALL THE POPULAR COMPUTER AND CONSOLE FORMATS.

LONG TERM CONTRACTS AVAILABLE IF REQUIRED.

PLEASE APPLY TO MARIA TAYLOR

CREATIVE MATERIALS LIMITED
28 CHURCH LANE, PRESTWICH
MANCHESTER M25 5AJ

Please Note: We cannot deal with telephone enquiries relating to this advert.

Development Teams and Programmers

The Sales Curve's fast growing software label **STORM** wants top quality Development Teams and in-house programmers to code arcade conversions and original licensed products.

We are also seeking original products for publication on the Storm label.

If you have a product for publication or a proven track record programming on Amiga, ST, PC, C64, Spectrum, Amstrad, Nintendo or Sega then contact;

THE SALES CURVE LTD
Unit 17, 50 Lombard Road,
London SW11 3SU
Or phone the Development Manager,
Rob Henderson, on 071 585 3308

Alternatively visit us at Stand D2 of the European Computer Trade Show on the 14th, 15th and 16th of April. (Call the above number for an appointment and we will supply you with a ticket if necessary).

Z80 / 6502 / 8086 Programmers

ARC DEVELOPMENTS

We are currently looking for new technical staff to work alongside an experienced programming team on the latest leading-edge products.

Successful applicants will be expected to demonstrate a sufficient level of experience in their chosen field.

So, if you want to work in a friendly environment with a competitive salary either apply in writing to:
Richard Underhill,
Arc Developments,
Suite 13,
Bridge House,
Bridge Street,
Walsall, WS1 1SE

or phone **0922 31129** and ask for **Rich** for an informal discussion

DOMARK

Domark requires a CDTV programmer! One who is experienced in "C" and Assember and has experience in programming on the Amiga using the operating system.

Start date is immediate.

Contact:
Russell Ferrier or Colin Boswell
on 0932 821357, by telephone
or by fax on 0932 821358

ICE SOFTWARE

With a view to expansion, ICE Software is looking to recruit experienced

PROGRAMMERS
GRAPHIC ARTISTS
GAME DESIGNERS
MUSIC PROGRAMMERS

with at least one previous product to their credit, for work on Amiga, Atari ST, PC and compatibles, Commodore 64, Spectrum and Amstrad computer formats

Contact: Martin Kane,
ICE Software, 244 Bath Street,
Glasgow, G2 4JW
Telephone: 041-332 9007
Fax: 041-332-8986

WJS Design

"BAAL" (PSYGNOSIS) - ST Format Gold 91% - ST User Star Game
"BLOOD MONEY" (PSYGNOSIS) - ST Format Gold 90% - NCE 5 star game
"ANARCHY" (PSYGNOSIS) - C&VG Hit! 96%

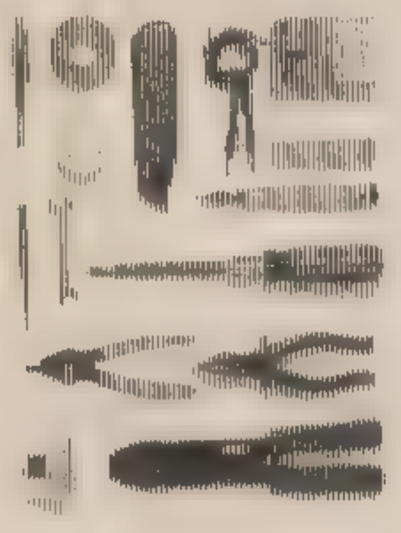
WJS Design are an experienced software house specialising in the very best 16 bit software on home computers and now, consoles. Vacancies within WJS Design have arisen and we will shortly be requiring the following people to join our in house team:

EXPERIENCED 68000 PROGRAMMER (AMIGA/ ST/MEGADRIVE)
GRAPHIC ARTIST

The successful applicants will be self-motivated, take pride in their work, non-smoking and possess a sense of humour! In return we can offer a competitive salary, top development systems and a relaxed working environment. We even give you FREE COFFEE, now we can't say fairer than that can we?

If YOU would like to put your name to some of the best software around, and you think you've got what it takes (and you like coffee), telephone
WAYNE SMITHSON on 0532 636554
or write:
WJS DESIGN, PARK MILL HOUSE, STANNINGLEY ROAD, LEEDS, LS12 3LR.
(previous applicants may re-apply)

CIRCUIT CITY



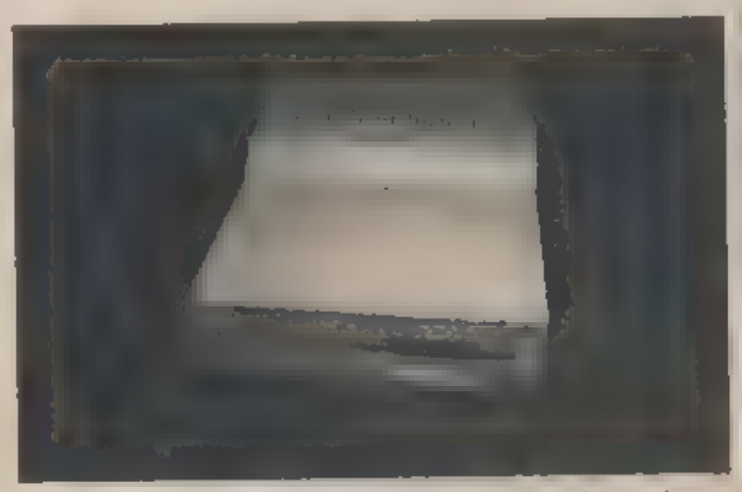
Many people have been caught out with what they thought was a good buy. But don't despair, Keith Pomfret shows you how to salvage useful parts from a bargain.

When you wander around auctions, radio rallies and computer fairs, it's very easy to see a 'bargain' and buy it – a decision based purely on price, without reference to feasability or compatibility.

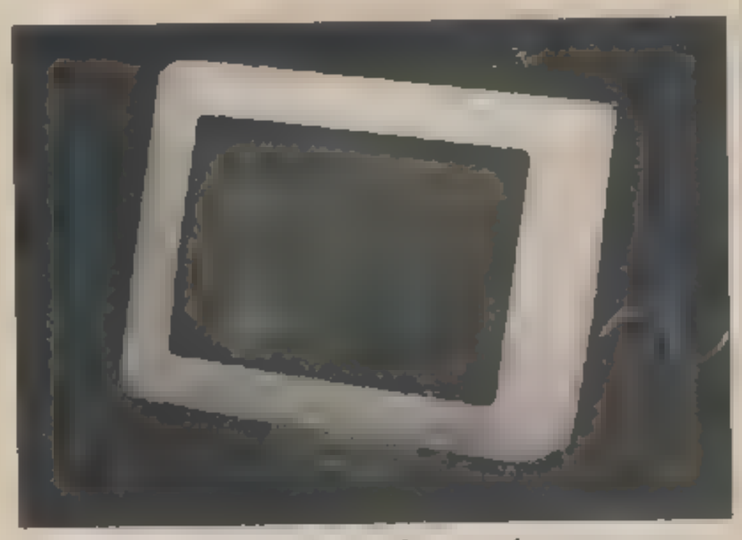
Every week, we get scores of letters from readers who have seen a mega-cheap PC, monitor, hard drive or etc and, having arrived home with the beast, have wondered how to use their bargain.

BIG ONES

Of all the large purchases, the ones that seem to cause the most confusion are the operating system ones. Before all of the 'clone' manufacturers started re-writing the IBM system and turning out machines that were truly IBM compatible there was a glut of 'almost' PCs on the market. These machines used the same operating system as an IBM but often had radically different hardware, disk drives and display controllers. An example of this is the Apricot F1 that lives in a corner of the *Express* office. Nowadays it's used mainly as ■ comms terminal but when it was new it was an innovative beast.



• *The Apricot F1 system unit hides a horde ■ useful goodies.*



• *A small mono monitor that can be re-used.*

We've had several letters from people who have bought an Apricot F1, only to find that MS/DOS doesn't mean PC. To confuse matters even further, Apricot modified the specification of the F1 several times so there are several different versions going from vaguely to slightly PC compatible. The later versions can read and write PC disks so if it's just a data swapping job that you want to do, the F1 may very well be a cheap alternative to prepare data at home to take to the office PC.

The *Express* F1 is an early model so if we'd bought it thinking that it was a PC we'd have been disappointed. It runs MS DOS 2.1 (we're up to MS DOS 5.0 now) and the way that it handles display and disk formatting aren't PC compatible.

It's fine as a comms terminal and if we need to transfer anything to ■ PC we do it down the serial port. To find out what was inside it that was re-usable, we pulled it apart.

The keyboard of the F1 ■ a quirky thing that is infra red and sends the keystrokes to the F1 in much the same way as the remote control ■ your TV or video.

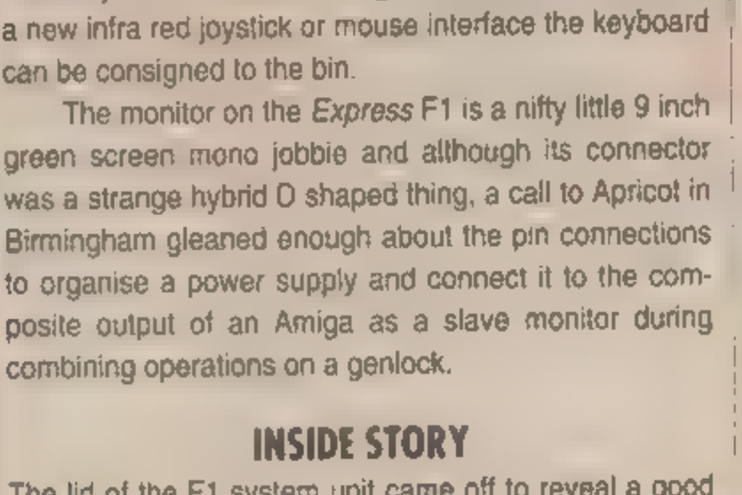
• *The power supply. There is life in it yet.*

Unless you're a hardware engineer intent on designing a new infra red joystick or mouse interface the keyboard can be consigned to the bin.

The monitor on the *Express* F1 is a nifty little 9 inch green screen mono jobbie and although its connector was a strange hybrid D shaped thing, a call to Apricot in Birmingham gleaned enough about the pin connections to organise a power supply and connect it to the composite output of an Amiga as a slave monitor during combining operations on a genlock.

INSIDE STORY

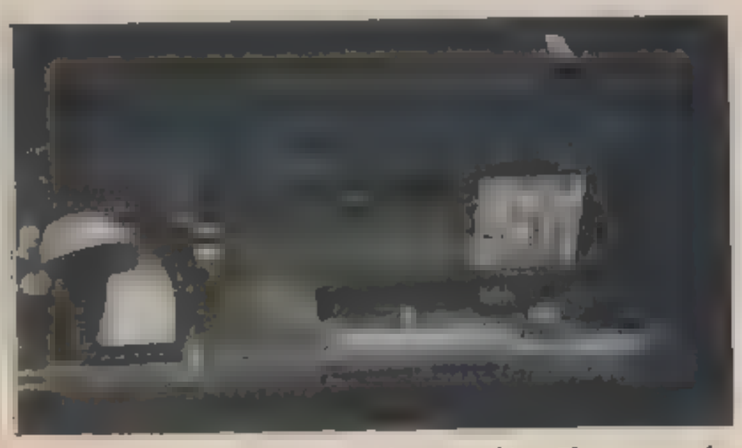
The lid of the F1 system unit came off to reveal a good stabilised power supply offering 12 and 7 volts in return for 240v mains. The disk drive was removed and again information from Apricot enabled us ■ find it a home as a spare drive for another machine. The F1 only had 256k of memory on board and removing this was the only really difficult job. It had been soldered directly to the board and the chips didn't want to part with their home. Had it been a machine surplus to requirement, the chips could have been removed without thought for the motherboard but we intended to carry on using it. This meant ■ touch like a midwife with the solder remover and a job that took the best part of two hours.



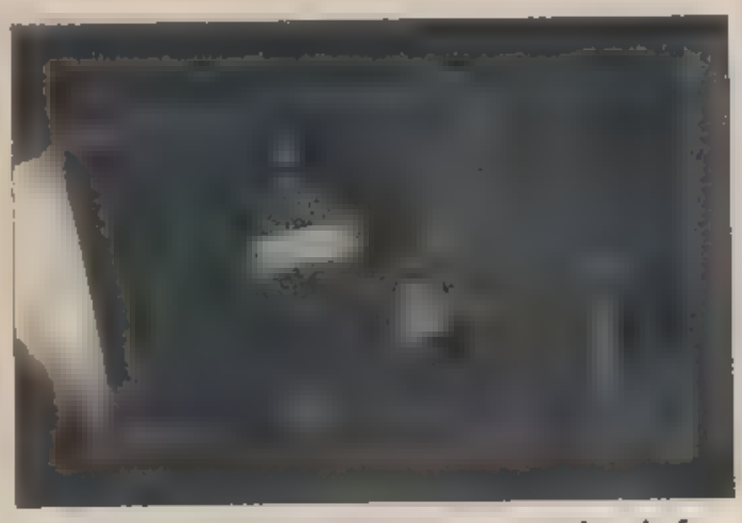
• *Plenty of spare parts. A power supply and disk drive for starters.*

Hard disk drives and monitors are popular 'cheap buys'. If you buy a hard disk drive, remember that on its own it is useless. It has no controller card and the £20 you spend on your 20 Megabyte bargain can end up costing you as much in bits and pieces to make it work as a complete hard-card from a reputable dealer would have cost in the first place.

Displays are much the same too. If you buy a monitor that isn't specifically intended for your machine and it works, you are very lucky indeed. There are at leat 20 different display standards and while some of these are slightly compatible, if you are going to buy a monitor, tell the vendor what you intend to use it with and obtain confirmation that it will work with your machine. If you can't get that sort of guarantee and you buy a monitor that won't work with your system, you may find yourself the proud owner of a TV shaped white elephant.



• *You will have to dig deep for the RAM chips. They are under this lot.*



• *Inside the hard drive box, there is a power supply and a fan.*

POWER TO THE PEOPLE

At ■ recent computer show, people were scrambling over each other for the bargain £15 hard drives but they all ignored a chunky metal box designed to hold two, full sized 5.25 inch hard drives. The vendor was asking £4 for it so we fetched ■ back ■ the *Express* office. Inside was a stabilised power supply of gargantuan proportions with the normal 12 and 5 volt taps. And as a bonus, the cables inside the machine were ideal for some disk drive bodging envisaged ■ a later project.

Hiding in the back of the box was a 240v fan that looked as if it would power an airbus. Installed in a home made 386 it is doing sterling service keeping the PCs innards ambient. ■

PBS Associates Ltd.

IBM Compatible PCs from just £305!

System/5 XT 640K RAM, 8 slots, multi I/O card, 720Kb 3.5" floppy drive, MDA monochrome display/printer card, monochrome monitor, 102 key enhanced keyboard, metal desktop case - **£305**

System/5 286-12 12 Mhz system 1Mb RAM, 6 slots, multi I/O card (2 floppy disk, 2 hard disk, 1 serial, 1 parallel and 1 games ports), 1.2Mb 5.25" or 1.4Mb 3.5" floppy drive, MDA mono display/printer card, monochrome monitor, 102 key enhanced keyboard, metal desktop case - **£385**

System/5 286-16 16Mhz system, 1Mb RAM, 40Mb hard disk drive, 7 slots, multi I/O card (2 floppy disk, 2 hard disk, 1 serial, 1 parallel and 1 games ports), 1.2Mb 5.25" or 1.4Mb 3.5" floppy drive, MDA mono display/printer card, monochrome monitor, 102 key enhanced keyboard, metal desktop case - **£585**

System/5 386SX-16 16Mhz 386SX system, 1Mb RAM, 40Mb hard disk drive, 7 slots, multi I/O card (2 floppy disk, 2 hard disk, 1 serial, 1 parallel and 1 games ports), 1.2Mb 5.25" or 1.4Mb 3.5" floppy drive, VGA mono display/printer card, VGA monochrome monitor, 102 key enhanced keyboard, metal desktop case - **£780**

PBS Associates Ltd 1 Lagan Walk, Peel Hall, Manchester, M22 5WG
Telephone 061-499 0425 (24 hrs) 0457 866142 (24 hrs) 0831 582693

Access VISA

AMIGA REPAIRS
JUST £44.95 inc.

- ★ Commodore authorised and registered repair centre
- ★ Over 10 years experience with Commodore computers
- ★ 20 qualified technician engineers at your disposal
- ★ We will undertake to repair your Amiga 500 computer for just £44.95 including parts, labour, VAT and post & packing
- ★ Most computers will be turned around in just 24 hours!
- ★ Prices include full service check, overhaul, soak-test and replacement of power supply unit if necessary
- ★ Repairs to keyboard and disk drive also included (£25 extra if these units are unrepairable and require complete replacements)
- ★ All repairs covered by a 90 day warranty

Upgrade your Amiga from 512K to 1Mb of memory for just £25.00

SPECIAL EXCLUSIVE OFFER:

If you submit your computer to ourselves for repair, enclosing this advert along with just an additional £25, we will supply and fit a 512K memory expansion at no extra cost.

How to take advantage of this exceptional offer: simply send or hand deliver your machine to the workshop address detailed right, enclosing payment and this advert and we will do the rest. (If possible please include a daytime telephone number and fault description).
** If you require 24 hour courier to your door, please add £5 else your computer will be sent back by contract parcel post.*

WTS ELECTRONICS LTD

STUDIO MASTER HOUSE
CHAUL END LANE
LUTON, BEDS, LU4 8EZ
Telephone (0582) 491949 - (4 lines)

WTS reserve the right to refuse machines that in our opinion are tampered with, to an extent beyond reasonable repair

THE PD COLUMN

This week, our PD patrolman Frank O'Connor puts Batman and Madonna in the same drive. And, as an added treat he harks back to some almost forgotten greats.

Clunk! A massive bag of disks drops onto the desk, quickly, before the creaking, straining desk gives way, they are slotted into the nearest Amiga.

The bundle comes from Dozsoft in Middlesex. Dozsoft has been pumping out PD stuff since the very earliest days of the Amiga 1000. It has no particular specialist field, but does a wide range of stuff, including the usual demos, a lot of games, and even more useful utilities and serious stuff.

Included in the bundle of Dozsoft stuff, was a disk utilities package, containing all of the usual tools. The package works well, and is reasonably simple to get to grips with. Also included was a very useful comms package.

• Racey pop foxtress Madonna indulges in a bit of Amiga hanky-panky.

Comms packages on the Amiga are never exactly interesting, but again this one is well executed, and performs its task in a reasonably efficient manner.

The one disk you should get hold of is the Predator's Megademo. Nothing to do with twisted alien space fiends, it does include a couple of absolutely outstanding games. Nothing fancy, but an excellent copy of the old Atari 2600 game, *Combat*. It almost brings a tear to the eye! More nostalgia in the form of a three player version of the *Tron* lightcycles game. Phwoar! more fun than a guy should have. Lots of music too, on this disk, some of it quite impressive.

Cartoon lovers will flip for a disk called *Puggs in Space*, a ■ too cute for those of you with a nasty dispositions, but it has some beautiful animation, and goes on for quite some time.

Also worth a mention is the Crionics *Neverwhere* demo. Some fine music, some excellent 3-D routines, and some totally outstanding digitised piccies of everyone's favourite sex bomb pop starlette Madonna.

ATARI

Atari owners might like to see one of the disks available from Public Sector PDL in Stevenage. Curious only in that it was written by the boys and girls from Atari, it is really an in store demo, publicising the peripherals available for the ST. Nice though, and a neat little thing to have in your collection.

If you are after something a little more serious, or perhaps a better term would be useful, then it should be noted that Public Sector does a nice line in practical PD. Just about every tool and utility you can think of, but special mention should be made of a select few. The standard GEM file selector on the ST ■ a bit duff to be perfectly honest, so the really useful *Iconew* option, which changes all the stuffy old GEM icons into lovely interesting ones, makes a big difference in that department.

Stexscan is a great little program, which plots graphs of currency exchange rates, very useful for ■ you budding Gordon Gekkos out there. There is also a limited speech synth program which uses digitised increments of speech... realistic, but very, very odd.

Another goodie to watch out for on the ST scene is the *Batdance* demo, it contains bits of the Batman soundtrack, and can be fiddled with. Muck around with the samples, and read the scrolly message, play it backwards, forwards, or speed it up... you could be just like the purple Prince!

Speaking of odd, this place gets more like the Twilight Zone every day. Just after that ranting monologue about spooky old computers, a little envelope appeared on the desk. Ripping open the envelope, the contents spilled out...

AMIGANUTS UNITED

169, DALE VALLEY ROAD, HOLLYBROOK, SOUTHAMPTON, SO1 6QX
MON - FRI: 10am to 6pm TEL: 0703 785680
AMIGANUTS ARE THE OFFICIAL UK DISTRIBUTORS OF THE T.BAG DISKS AND THE LATEST ISSUES ARE ALWAYS AVAILABLE FROM US FIRST

326:	POWERPACKER by Nico Francois Excellent crunch util	£1.50
445:	SHOWBIZ ANIM by Robert Coms (runs for ■ mins) (1 Meg)	£1.50
453:	MINIBLAST by Anders Bjenn (Multi-tasking game)	£1.50
463:	Tobias Richters BILLIARD/RED LOTUS & JET ANIMATIONS	£1.50
468:	FRAXIONS FORGOTTEN REALMS slideshow 90 (ham pics)	£1.50
484:	TERRA MUSIC 12 Toons (The Beatles re-mix is great)	£1.50
515:	NEWTEK DEMO REEL III (7 mins of animation/sound efx!!!)	£3.00
538:	SPRITER Design your own animated sprites	£2.00
539:	JAZZBENCH This is an improved workbench replacement	£1.50
551:	SLEEPY Animate those sleepy icons! (Charityware)	£1.50
559:	ROT. A 3 dimensional object generator	£2.00
562:	LAUREL & HARDY " Trail of the Lonesome Pine" (2 drives)	£3.00
565:	PYTHONS "Lumberjack Song" (two drives required)	£3.00
577:	8 useful utilities for the hard drive user etc	£1.50
580:	NCOMM V1.9 Excellent prog for the modem user	£1.50
596:	200, (YES 200), utilities by Gary of Pendle Europa	£1.50
599:	PONTOON. A nice version by Chris Labrum	£1.50
600:	FRAXIONS horror show animation demo disk	£1.50
612:	GAMES COMPILATION Montana-Kings-Towers + ■ others	£1.50
618:	REFLECTIONS II. 3/4 of an hour's music by the master	£1.50
627:	RAISIN, MARS & DELUX (3), animations + TV intro	£1.50
647:	HORROR DEMO V1.2. Good horror pics Adults only	£2.00
657:	COMICAL SEASIDE CARTOON slideshow by Utopia	£1.50
668:	"LES GRADOS" pic-show. Very unusual pictures	£1.50
674:	SYSTEM 5 COMPILATION A demo, intro and three games	£1.50
724:	6 GOOD DEMOS + a game The Questor Cowboy anim is good	£1.50
728:	UTILS The famous Boot-Shop, Boot-Kit + others	£2.50
756:	PSEUDO-COP GAME (like Robocop) Good, but not easy	£2.00
762:	THE BEGINNING A well presented demo + others (1 Meg)	£2.00
967:	STEREO 3D demos by Exit. (Great! but needs 3D glasses)	£2.00
1018:	THINKAHEAD A real mind boggling game from the Clones	£2.00
398:	GHOSTPOOL and SPIGOT animations by ■ Gandalf (1 Meg)	£1.50
521:	ALL NEW STAR TREK. With authorised English instructions	£4.00
576:	EDUCATION packed with progs for the children	£2.00
581:	SID Finding the CLI a slog? Then you need this prog!	£2.00
639:	C MANUAL by Anders Bjerin. 3 disks, 200 pages of advice	£5.00
640:	8 GAMES including the Train Set, a MUST for the kids	£2.00
649:	BUDBRAIN Two disk megademo (for adults only)	£3.00
658:	ANIMBRIDGE (alter animfiles) + update of Skypaint/Skyplay	£2.00
700:	D-COPY V1 Excellent copier program Full instructions	£2.50
758:	BOOT-BENCH. This one is ■■■ of Booting utilities	£2.00
741:	NorthC V1.3 (2 disks) ■ you are into C, this ■ a must!	£5.00
499:	LOGICLAB Design your own electrical circuits	£2.00
790:	STARTREKKER. Music util + Diskmaster V3 & other utils	£2.00
899:	MAKE-WORDS, Match-Words & Match Anagrams By M.Meany	£2.00
812:	STAR TREK U ■ version Good! (1 Meg min) (2 drives)	£4.00
839:	C-LIGHT Ray tracing package A must for the artist	£2.50
848:	KEFRENS excellent Powermenu & Font Designers A must!	£2.50
901:	AMI-FX issue 2. A must for fractal fans (3 disks, 1 Meg)	£4.50
910:	PAIR-IT An excellent educational game for the kids	£2.00
906:	DYNAMITE DICK Dig for treasure, avoid the bats! Good	£2.00
907:	SNAKES & LADDERS-GAME This is a must for ■■ ages	£2.00
922:	BAD BIRD ANIM by Dr-Gandalf (1 Meg - excellent)	£1.50
929:	DAWN MEGADEMO II. From Australia. This is good	£1.50
933:	A-GENE genealogy This is the new V3. (1 Meg min)	£2.50
939:	FRAXIONS new megademo "The Wall" It's good!	£1.50
942:	SYNERGY Well presented sculpt 4D pictures	£1.50
950:	THE EVIL DEAD by Possessed. Can you kill the zombies?	£1.50
969:	FILLET THE FISH. This is an amusing animation.	£1.50
832:	TEXTPLUS 2.0E. Absolutely the best PD wordpro program	£2.00
976:	THE LAUREL & HARDY SHOW. ■ disk, 1 Meg anim by Brazzle).	£3.00
1021:	AT THE MOVIES Animation with sound efx. (1 Meg)	£1.50

******** THE LISTING BELOW IS FROM OUR LICENCEWARE PROGRAMS FOR WHICH THE AUTHORS RECEIVE A PERCENTAGE. THEY ARE ONLY AVAILABLE FROM US ********

705: AMIBASE PROFESSIONAL. (by Keith Grant), database prog. £2.00 (1 Meg Amibase Professional II coming soon, watch this space for details)
876: QUIZMASTER Think you know it all? Well now you can prove it. Save and re-load facility. For 1 to 4 players. Excellent! £3.00
877: 1 ACROSS 2 DOWN. A fully fledged crossword program. It comes on two disks for only £5.00. Data disks 2 & 3 now ready at £2.00 each.

Into coding? Want to learn? The Amiga Coders Club is for you! ACC 1-4 compressed issues of an excellent series for coders, even if you are new to the Amy, get this if you want to learn Assembly, use Devpac etc. This introduction to the world of Assembly is only £1.50. The Amiga Coders Club disks are packed with source, hints, tips from many of the well known coders that are on the Amiga scene today. Issues 5, 6, 7, 8, 9, 10, 11 are now available. Please note, excluding the compressed introductory disk, Amiga Coders Club disks are £3.00 per issue.

******** HERE ARE SOME NEW GOODIES ****** SOME OF THESE ARE COPYRIGHTED TO AMIGANUTS ********

988:	MOD PROCESSOR V1.8. Make picture and/or Music progs, adjust picture etc. It even loads crunched modules! Excellent	£3.50
971:	THE NEW MASTER VIRUS KILLER V2, It recognises and kills 105 of the pests + other features. (with hard drive protect)	£2.50
973:	MED V3 by Teijo Kinnunen is here! The very latest version of this commercial quality music prog. Brilliant! (1 Meg best)	£3.00
973S:	PROGRAMMERS can get their hands on the complete source of Med V3 to see just how Teijo put this one together. Bargain	£2.00
974:	FOR THOSE AMY USERS that have an interest in religious matters. The complete New Testament is on this disk!	£2.00
990:	AMIGA C CLUB MANUAL V2 is now ready. Loads more info, source and help from Anders Bjerin. This new manual is on 4 disks	£6.00
996:	The latest and easiest setkeys prog to redefine your keymaps. Plus a host of other utilities for icon design etc	£2.00
1010:	MAGNETIC FIELDS. New demo - compilation. This includes the new Coma demo and the well presented Bobby the Ball demo	£1.50
1015:	THE RED DEVIL DEMO CREATOR This requires some expertise on the Amiga and needs 1 Meg. (Will not work on Fatter Agnus)	£2.00
1026:	STAR TREK MEGADEMO Another well presented two disk set from Tobias Richter, combining pics/animation and music (1 Meg).	£3.00
1031:	GAME COMPILATION. Spacepoker, a good version of the poker-bandit, plus Running and Snakepit, both with full editing!	£2.00

COMING SOON!! THE FANTASTIC OCTAMED. A TRULY PROFESSIONAL MIDI COMPATIBLE MUSIC PROGRAM WITH A FULL EIGHT CHANNELS!!!
ALL PRICES ARE INCLUSIVE OF POST AND PACKING. PLEASE NOTE: WE DO NOT ACCEPT CREDIT CARD ORDERS
FREE DISKS + FREE PROGS + FREE MEMBERSHIP - OVER A THOUSAND DETAILED PROGS PLUS SOME GAMES TO PLAY, ON THE MAIN CATALOGUE DISK. ONLY £1.00
THE 1991 UPDATE TO OUR MAIN CATALOGUE IS NOW READY FOR £1.00 (The update contains only the LATEST additions to the library)
(NOTE! AFTER ITS INITIAL PURCHASE, THE 1991 UPDATED CATALOGUE WILL BE RE-COPIED, FREE!, IF YOU RETURN IT WITH AN ORDER FOR £15 OR MORE)

• Batdance demo from PDL. D'ya ever dance with the devil under the pale moonlight? **(no – Ed)**

THE SPOOKY SAM COUPÉ SAGA!

Inside were Sam Coupé PD disks! Really, it's true. The stuff comes on 3.5 inch disks, from a Mr. G Middleton of Leeds, and includes a couple of movie demos. The first, is a video trailer thang, the subject of which is the science fiction Arnie romp, *Total Recall*, and the second, a similar *RoboCop* demo.

The *RoboCop* demo has a memory sensing routine, and unfortunately will only run on 256k machines.

Still, if you have a Sam Coupé, you'd probably be very interested, so I have included details on how to contact Mr. Middleton at the end of the column. Hurrah!

GOLDEN OLDIES

This week, after a slow trickle of PD stuff, mostly scrolly German and Italian demos, a thought occurred; what happened to all those bizarre computers we used to know and love?

During the mid 80s, a positive rush of brand spanking new computer hardware hit the streets. Many young companies, with innovation and surprise on their minds, launched computers into the 8-bit sea. Some of which floated, while some sank without a trace.

It is these mysterious dinosaurs of computing, the lost relics if you like, which inhabit many a dusty corner throughout the land which are of interest to us. Specific examples should include perhaps, the Oric, and Oric Atmos, two 8-bit wonders, the former remembered fondly for its built in sound effects, accessible from BASIC.

Does anyone remember the Enterprise? The matt black organic monstrosity with the built in joystick. How about the Tatung Einstein? Or maybe the best looking computer of all time, the Memotech? Other potentially great machines include the Coleco Adam, an upgrade for the Coleco console, and a brilliant machine in its own right.

Cast your mind back to the Sord M5? What a machine! More recently, we have the Sam Coupé, already beginning to slip into cult status and obscurity.

The question is, do these machines still have a user base? Are there hundreds of frustrated owners out there, desperately looking for software?

We all know from experience, and from common financial sense, that there is no commercial viability in producing software for these machines, but the public domain is little influenced by monetary matters, and enthusiasm counts for so much more.

So, maybe out there in the darkened alleyways and mean streets of PD land, programmers and enthusiasts are beavering away into the night, and discovering new tricks on their ancient, unloved machines.

If you know such a group, or have any thoughts on the matter, why not drop a line to the PD Column?

Who knows, before too long you could be pulling out your old computer from the more dangerous recesses of your attic, and then booting up something scrummy on that antique micro.

WHERE TO GO

G.Middleton

G. Middleton sounds like a kindly chap, and if it's Sam Coupé stuff you are after, then he's your man. To get hold of him write to: G.Middleton, 35 Victoria Mount, Horsforth, Leeds LS18 4PU

Dozsoft

Dozsoft have been in the Amiga PD business for quite some time, and if you want to get in touch with them, write to: Dozsoft, 32 Benedict Drive, Bedfont, Feltham, Middx TW14 8JL

Public Sector PDL

If the ST is your main machine then you really should be talking want to Public Sector PD. Drop them a line at: Public Sector PDL, 50 Ripon Road, Stevenage, Herts., SG1 4NA. Tel: 0438 364722 (ask for Michael).

3.5" from 28p

'OUR DISKS ARE A SNAP AT THESE PRICES'

	3.5" DS/DD	3.5" SONY	3.5" DS/HD	5.25" DS/DD	5.25" DS/HD
25	9.99	12.99	22.99	7.99	13.99
50	18.99	23.99	43.99	13.99	24.99
100	32.99	41.99	64.99	22.99	47.99
250	76.99	109.99	156.99	55.99	113.99
500	148.99	191.99	303.99	109.99	213.99
1000	284.99	357.99	599.99	214.99	399.99

SNAP COMPUTER SUPPLIES LTD

LOCKABLE DISC BOXES
40/50 x 3.5 - £3.49
50 x 5.25 - £3.49
80/100 x 3.5 - £3.99
100 x 5.25 - £3.99
THESE PRICES ONLY IF PURCHASED WITH DISKS

*Our disks are fully guaranteed and come complete with labels or envelopes, labels and tabs.

AMIGA 3.5 EXTERNAL DISK DRIVE £59.99
AMIGA 512K RAM EXPANSION WITH CLOCK £34.99
SPECIAL OFFER BUY BOTH FOR £93.99

VISA

ALL PRODUCTS SUBJECT TO AVAILABILITY. ALL PRICES INCLUDE VAT PLEASE ADD £2.99 POSTAGE AND PACKING E.O.E.

Hotline Number 0845 045455

1st Floor, I-Mex Business Park, 42 Flaxley Road, Stechford, Birmingham B33 9HL

EXPRESS ON-LINE

This week our comprehensive listings guide brings you Bulletin Boards.

EXPRESS IS NOW ON-LINE!!!!
JOIN THE EXPRESS CONFERENCE ON CIX (081-[illegible])

NEW ARRIVALS ON-LINE

We would like to thank Keith Burton (sysop of Phantom) for his help in updating the listing this week. Whereas we always like to hear of new boards being set up, we also need to keep the list up to date. So if you know that any of the boards listed have now ceased to operate please write in and let us know.

Keith is also trying to compile a comprehensive list of Viewdata bulletin boards and would like any Viewdata BBS sysops to get in touch with him at: The UK Viewdata Directory, Phantom Comms, 56 Aldham House Lane, Wombwell, Barnsley, South Yorkshire S73 8RG.

HUMBERSIDE EAST COAST SYSTEMS BBS running on an Atari 520 STFM. On-line 24 hours a day, seven days a week. Bauds 300, 1200, 2400 and is Hayes compatible. We cater for most computers. Games, utilities, adult sections, computer shopping, PD and vast library for downloading free of charge. User groups very welcome. BBS 0964 614524, voice helpline 0964 612957.

DataNET! BBS 0245 323693 DH-HST. GT Net/Node: 050/058.24 hours a day. Speeds up to 14.4kbps. Features daily netmail from around the world, over 50 conferences (including two international *Star Trek* conferences), a good array of file areas (including GIFs games, utils, comms and anti-virus files), on-line games and a continuously updated news bulletin menu.

PHANTOM BBS is back on-line. Known as the best BBS in the North before it closed last year, Phantom is now back to start all over again with a vengeance. Telephone 0226 340425. Viewdata only. Speeds V22/V23.

MAX BBS – Node 9 on 0905 58042, Node 4 on 0905 754151, Node 3 on 0905 57822, Node 2 on 0905 754127. Miracom dual standard including V42. Amiga and PC International Echo. Also Throbnet 24 hours a day non-stop for 11 years. Home of the B Box and conference 19 and all that.

LEVEL 9 BBS Telephone 0926 889208. 10pm to 10 am,Amiga. Atari, ST and PC all supported. Sysop Steve Elliott. Speeds 300 to 2400 baud with MNP 4/5. Amiga based.

01 For Amiga	071-377 1358	v21/22/22b/23
061 PC Support	061-443 1529	V21/22/22b/23
4/ABC	0460 64511	V21
Above Board	0254 682862	HST
Absolute Zero Q	081-741 7233	V21/22/22b/23
Advance Opus Hull	0482 28367	V21/22/22b/23
After Hours	0276 52096	V22/V22bis
Airtel	0342 717800	V21/22/22b
Aix-386	0905 52536	V21/22/22b/23
Ajl Electronics	0452 309125	V21/22/23/23v
Alan Solomon's	0494 724946	V21/22/22b/23
Alchemist	0666 504597	
Alternate Reality	0352 856626	V21/22/22b/23
Alternative Viewdata	081-761 8220	V21/23/23v
Almac PC Board	0324 665371	300–2400MNP5
	0324 665460	HST
	0324 665449	Hayes V 9600
Amiga II	0619 626377	
Amiga Board	0268 510495	V22/22b/23
Amiga Connection	081-981 9289	V21/23
Amiga Shack	0737 361178	V21/22/22b/23
Amiga South East	0293 28464	V21/22/22b/23
Amlink	021-778 5868	V21/22/22b/23
Amtech Support	0202 294716	V21/22/22b
Andrew's BBS	0384 296964	V21/V22/V22bis.
Andromeda Galaxy	0243 379430	V21/22/22b/23
Apple Crackers	0268 781318	V21/22/23
	0268 780724	V22/22b.
Apricot Tech Sup	021-456 2402	V21/22/22b/23
	021-456 2401	V21/22/22b
Arcade Fantasy	0533 376056	300-2400
Arcport	0252 737065	V21/23
Arena	0625 539063	V21/22/22b/23
Argus Project	091-490 0327	V21/22/22b/23
Arkham BBS	081-952 5128	V21/22/22b/23
Aspects	061-792 0260	V21/22/22b/23
ASTon-line	081-847 5389	
Attic	081-308 0466	V22/22b
Auld Reekie	031-663 9924	V21/22/22b/23
Avalon Northeast	091-564 0009	V21/22/22b
Babble BBS	0532 785964	V21/22/22bis
Babbs Tower	0394 276306	V21/22/22b/23
Banat Board	081-783 1151	V21/22/22b/23
Barnabas	0708 852526	Hst
Barney's Rubble	021-441 1801	V21/22/22b/23
Basingstoke Opus	0256 728331	V21/22/22b/23
Bath BBS	0225 83584	1/840060
Bath BBS	0225 840060.	V21/V22/V23/V22bis
Bay 88	0227 741528	V22 Bis/MNP5
BBS09	0705 736025	Hst
BBZ	081-663 3732	V21/22/22b/23
Betelgeuse 5	0463 231339	
Beyond Belief	0642 787898	V21/23
Bexhill Centre	0424 224417	V21/V22/V22bis/V23.
Bang Burger	081-420 6356	V21/22/22b/23
Bike Shop	0705 827764	V22/22b
Bixbox	0634 200931	V21/22/22b
Blackpool College	0253 57941	V21/22/22b/23
Blindin' BBS	01 764-0954	V21/23
Blitter BBS	0292 671638	300-2400.
Body Matters	071-603 7581	V21/22/22b/23
Boog	0252 626233	V21/22/22b/23
Boroughbridge O	0423 324532	V21/22/22b/23
Braindead Opus	0823 254352	V21/22/22b/23
Breakthrough	051-734 5817	V21/22/22b/23
Brown Bag	071-404 0897	V21/22/22b
Brunel BBS	0272 584352	V21/22/23
Budget BBS	021 311 1068	V21/V22/V22b
Buz Board	081-202 9175	V21/22/22b
Buzby's Grapevine	041-762 2000	Hst
Byte Back!	081-959 8105	V23
Cargo BBS	0420 475462	V21/22/22bis
Campus Ros	0223 357445	V21/22/22b/23
Castle BBS	0276 691872	V21/22/22b/23
Cats Board	0628 824852	Hst
Catweazle	081-428 9476	V21/22/22b
Central BBS	021-711 1451	V21/22/22b/23
Chase Wildcat	0543 871562	V21/22/22b/23
Chequers	0622 891308	V21/23
Chiba City	0501 44262	
Chipboard	0532 320225	V21/23/23v
Chronos' Lair	021-744 5561	V21/22/22b/23
The City BBS	021 352 1237	300-2400
CIX	081-399 5252	V21/22/22b/23
Clapham Junction	0234 64261	V21/22/22b/23
Cliff's Corner	0502 518274	V21/22/22b/23
Club 1512	081-204 8755	Hst
Co-op Board	081-316 6488	V21/22/22b/23
Co-op Board (crs)	061-832 1961	V21/22/22b/23
Co-op Board (nicc)	0509 826339	V21/22/22b/23
Co-op B'Mouth	0202 532701	V22/22b
Co-op P'Mouth	0705 754851	V21/23
Codeomatic BBS	0472 250690	V21/22/22b/23
Communitel Demo	081-968 7402	V23v
Compass!!	0942 896661	
C'center Opus	071-928 2005	V21/22/22b
Computers 4 Christ	0926 428294	V21/22/22b/23
Connection	071-978 8540	
Connections	081-903 1309	V21/23/23v
Connex	071-431 3922	Hst
Consett Forum	0207 506179	Hst
Corby Town Opus	0536 205113	V21/22/22b/23
Cornwall Gate Opus	0752 848806	V21/23
Cp/m User Group	0753 868196	V21/22/22b/23
Crown Green	071-245 1512	V21/22/22b/23
Crystal Junction	0384 441929	V21/V22/V22bis/HST
Crystal Tower	081-886 2813	V21/22/22b/23
Cure	0604 27865	Hst
Cv Database Bb	0427 810211	V22/22b
Cyberspace Amiga	0295 275045.	V21/V22/V22bis
Cynotel	081-346 2816	V23v
DIE	061-434 9907	V21/22/22b/23
Dambusters	0203 333195	V21
Dark Crystal	081-207 2989	Hst
Dark Halo	0392 434477	Hst
Dark Side	0446 33729	V21
Darkhaven	0604 413716	V21/22/22b/23
Data Network	081-478 5464	V21/22/22b/23
Datasel/wanderland	081-680 5330	V23
Datasoft Opus BBS	0460 54615	V21/22/22b/23
Datatrade Q	0536 725180	Hst
Dbase User Group	0532 842210	V21/22/22b
DCE Board	0296 88165	V21/22/22b
DCS	081-879 7578	V21/22/22b
Deep Thought	0634 683696	Hst/v32
Desert	0244 550332	V21/22/22b/23
Desert BBS	0604 758126	V21/22/22bis
Diamond Opus	0791 86504	Hst/v32
Diggertel #1	0925 411265	V21/22/22b/23
Digital Matrix	021-705 5187	V21/22/22b/23
Direct Access	0935 79760	up to 2400
Direct-line 1	081-841 1847	V21/22/22b/23
Direct-line 2	081-842 2030	V21/22/22b
The Dock	091 454 6978	300 to 2400
Domain BBS	081-773 2422	V22/22b
Dragon's Tower	081-202 0709	V21/22/22b
Dunedin Blackhole	031-669 2974	
Dwarfen Realm	0376 501036	V23v
Eddie's BBS	0635 71324	V21/22/22b/23
Edinburgh Castle	031 334 7043	HST
Empire BBS	0473 683215	V21/V22/V22bis
Empirical Research	0543675158	V21/22/22b/23
Empyrion	0792 580781	V21/22/22b/23
End To End	0376 84644	V21/22/22b/23
End Zone	0524 752245	V21/22/22b/23
Engineers Workbench	051-327 7036	V21/22/22b
Equaliser	0232 454097	V21/V22b/V23
Eureka II	081-683 0629	V21/22/22b/23
Exchange S/w	0767 5051	V21/22/22b/23
Eye-2	0525 715789	V21/22/22b/23
Fat Opus	0736 794827	V21/23
Falcon BBS	081-527 4165	V21/22/22b/23
Family Skeletons	0480 812097	V22b
Fido Uk1	0734 713909	V22/22b
Flight Path	081-759 1957	V22/22b
Focus International	0905 795002	
Focus Tbbs	0303 42690	Hst
Focus Uk	0905 774477	V21/22/22b/23
Forth View	031 660 6680	V21/22/22b/23
Forum-80 Hull	0482 859169	V21
Foundation	0473 688183	12/2400
Fox's Den	0689 27085	V21/22/22b/23
Free Net One	0767 51972	V21/22/22b/23
Freelance Lynx	0480 406261	V21/22/22b/23
Friday The 13th	0642 224833	V21/22/22b/23
Fuzzy Logic	0634 200707	V21/22/22b
Gabbs	0705 524805	V21/22/22b/23
Gallery Qbbs	081-847 2795	V21/22/22b
Game Over	0752 848070	V21/22/22b/23
Games Online	0273 699200	
Gaslamp	0706 358331	V21/22/22b/23
Gaugonzola BBS	0453 511112	V21/22/22b
Ger's Lair	071 436 5749	300-2400
Gnome At Home	081-888 8894	V23v
Gods	081-994 9119	V21/23
Golly!	0734 320812	V21/22/22b/23
Goobtel	0602 706307	V21/23
Good Life	081-541 0187	Hst
Gopherit'S Box	061-320-3208	V21/22/23
Gourmet	0474 536654	V21/22/22b
Grainstore	0905 770198	V21/22/22b
Grenadier	0825 762803	V21/22/22b
Hacker's Delight	0702 523853	V21/22/23
Halfwits BBS	0272 340310	V22/22b
Hamnet	0482 465150	V21
Harlequin	061-945 3612	V21/22/22b/23
Hastings BBS	0424 717919	V21/22/22b/23
Hawk'S Castle	0344 411621	Hst
Hazzard	071-737 0505	V21/22/22b/23
Health-data	081-986 4360	V23v
Heartbeat	0734 352032	
Hilary's Board	0277 233468	V21/23
Hot-air Opus	0579 70347	V21/22/22b
Humber Bridge	0482 850785	V21/22/23
Ichthus (trinity 3)	0734 461466	V21/22/22b/23
	0903 700771	V21/22/22b/23
Index Linked	0227 770403	V21/22/22b
Industrial Archaeologists Diggings BBS	0517 331135	300 to 2400
Infocomm UK	0895 72021	V21/V22/V22
Islington BBS	071-704 0760	Hst
	071-226 1248	V21/22/22b/23
Jersey BBS	0534 37779	V21/22/22b/23
Jersey Opus	0534 39389	V21/22/22b/23
Jocks Away!	031-225 5368	V21/22/22b/23
Jolly Fisherman	0754 67796	V21/22/22b/23
Jolly Roger	081-742 1640	V21/22/22b/23
Jusavo	0324 32414	V21/23
Just The Place	0705 258694	Hst
K-wood	0608 83458	Hst
Kashmir'S BBS	0472 347882	V21/22/22b/23
Kernow Bb	0209 821670	V21/22/22b/23
Key-board	0908 668398	Hst
Kidlington BBS	0865 56703	V21/22/22b

Kirklees Opus	0484 665415	V21/22/22b/23
King Of The Castle	0233 620228	V21/22/23
Komputer Knidge	0844 274066	V21/22/22b/23
Kybernesis	081-673 7294	V21/22/22b/23
Labyrinth	051-724 4458	V21/23
Lamplight Qbbs	0705 811531	V21/22/22b/23
Laser Tbbs	0532 438430	V21/22/22b
Lau's Ql Bb	081-751 6096	V23v
Lightfinger's Place	0202 485723	V21/22/22b/23
Linelight	0580 212043	V23v
Linx BBS	0522 511277	V21/22/22b/23
Liquorice Allsorts	0633 279985	
Liverpool Mailbox	051-428 8924	V21/22/22b/23
Liverpool Ros	051-931 4271	V21/22/23
Loch lomond	0389 55762	V22/V22bis
Loft	0442 230461	V21/22/22b/23
Logical BBS	0772 623167	300-2400
Log On In Tynedale	0434 606639	V21/22/22b/23
London BBS	081-455 6607	V21/22/22b/23
London City Mag	081-468 7648	V21/23/23v
London Connexion	081-667 1313	V21/22/22b/23
London Embassy	081-366 1778	Hst
London Guest Hse	081-748 0974	Hst/v32
London Mail Centre	081-534 1200	V21/22/22b/23
London Metropolis	081-519 1055	V21/22/22b/23
Loony Bin	0703 787489	V21/23
Mabbs	021-444 8972	V21/22/22b/23
Mach II BBS	0242 260 685	V21/22/22bis
Mactel Hq (grn Box)	0602 455444	V21/22/22b/23
Mactel Metro	081-543 8017	V21/22/22b/23
Mactel Phoenix	0473 610139	V21/22/22b/23
Madness BBS	0603 300947	V21/22/22b/23
Magic Castle BBS	021-430 3761	V21/22/22b/23
Magic Mushroom	0361 83641	V21/22/22b
Magnum	0274 547006	V21/22/22b/23
Magrathea	0376 24402	V23v
Manor	0980 863031	V21/22/22b/23
Marctel	081-346 7150	V21/23/23v
Matrix	051-255 0225	V21/22/22b/23

Max BBS V21/V22/V22bis/V24/V32/V42/V42bis/9600/14K4/MNP and LAPM. Numbers as follow:

0905 52536	Alien Node
0905 57822	We/ve Got A Hot One Here
0905 58030	Throbnet Node
0905 56610	So You Like Spam Node
0905 57112	Dirty Lines Node
0905 56335	Amiga Node
0905 58042	Troffers Node
0905 754151	For [redacted] Software Troffers
0905 754127	Live and Kicking Dawn Raid

Mbbs Leconfield	0964 550745	V21/22/22b/23
Mbbs Mitcham Ilc	081-648 0018	V21/23
Medway	0634 280031	V21/22/22b
Mektronic Consultants	061-773 7739	V21/22/22b/23
Merkinstead	061-434 7059	V21/22/22b/23
Merlin	0443 834179	V21/22/22b/23
Mgbbs	0443 733343	V21/23S
Micro Live Bb	081-567 6500	V21
Micro Update	081-877 1529	V21/22/22b/23
Microdeal	0726 65422	V21/22/22b/23
Microlog	0422 71921	V21/22/22b/23
Midget Gem	0748 834836	V21/23
Mind Boggles	0362 762868	V21/22/22b/23
Miridian	0273 588924	up to 2400.
Mininet 3	0642 672813	V21/22/22b/23
Miracom Support	0473 232540	Hst
Mirage	061-652 1242	V21/22/22b/23
Mirror II	0628 810889	V21/22/22b/23
Mirrorworld/quest 1	0883 844044	V23
Mission Impossible	0602 654329	Hst
Mk Board	0908 671289	V21/22/22b/23
Mkbbs	0908 504556	V22/22b
Monkey Tree	0952 677002	V21/22/23
Monusci	0293 545665	V21/22/22b/23
Motor Exchange	0484 435314	V21/22/22b
Multi-bbs	041-649 9043	V21/22/22b/23
Murdoch's Hangout	021-711 2620	V22/22b
Murky Caverns	081-426 9386	Hst
Mwcfe	0926 421844	V22bis
My Little Phoney	0865 773277	V32/HST
Network 23	0274 482021	V23v
Nicc Mid-west	0341 250377	V21/22/23
Nighthawk	0329 45384	300-2400
Nite Life	071-976 6807	V21/22/22b
No Escort Required	081-200 3817	Hst
No.1 BBS	081-958 1689	V21/22/22b
Noah BBS	0272 572322	300-2400
Norpac	0434 608324	V21/22/22b
North Wales BBS	0978 88372	V21/22/22b
North Yorks Q	0423 868065	V22/22b
Northern Lights	0768 773685	V22/22b
Norwich Onion BBS	0603 423305	V21/22/22b/23
Nova	0455 553371	V21/22/22b
Nova-net	0274 370760	V22
Odd-ball	081-679 2583	V21/22/22b/23
On The Beach	0273 600996	V21/V22/V22bis/HST
Open Access	081-427 3974	
Optix	0482 872294	V21/22/22b/23
Organic Garden	081-464 3305	V21/22/22b/23
Out [redacted] The Blue	081-668 7667	V21/22/23
Owl Service	0532 605876	V21/23
P'S & Q'S	051-236 3105	V21/22/22b/23
Pacific Lightning	0732 845338	V22/22b
Packet BBS	081-547 1479	V21/22/2
Packet Place	0484 435620	V21/22/22b
Palm Beach	0303 265979	V21/22/22b/23
Pazaz Viewdata	0383 620259	V23v
PC Access	071-608 0081	V21/22/22b/23
PC-Amiga Link	04023 84914	up to 2400
PC Forum	0322 335348	V21/22/22b/23
PC Serve Shop	081-864 2633	V21/22/22b/23
PC Serve Softnet	0895 420164	V21/22/22b/23
PC Serve Storehouse	0494 728094	V21/22/22b/23
PC-VAX Opus	081-800-3549	V21/22/22b/23
Pcamiga BBS	0602 735119	V22/22b
Peacenet West	0895 448998	V23v
Pecan Software	0272 248076	V21/22/22b
Penguin	0943 830820	V21/22/22b/23
Phantom	0226 340425	V21v/22v/23
Phoenix	0249 817704	Hst
Piston Popper	0424 853361	
Plug-ole	021-472 0256	V21/22/22b/23
Plus And Minus	0559 322766	V21/22/22b/23
Poacher	0476 62450	V21/22/22b/23
Polynet Bb	071-580 1690	V21/22/22b/23
Port Of Call	081-391 5779	V21/22/22b/23
Power Play Q	0698 423669	V21/22/22b/23
Power Tower	0533 880114	V21/22/22b/23
Prestonet	0772 612462	V23v
Project BBS	0384 401770	V21/22/22b/23
Prometheus	081-300 7177	V23v
Proximity	0793 480028	V21/22/22b/23
Publishing Shop	091-261 5228	V21/22/22b/23
Purely Pc	0232 645942	V21/22/22b
Pyramid	071-239 0871	V21/22/22b
Pyroto Mountain	0895 59071	V21/22/22b
Quasar	0846 693067	V21/22/22b
Really Interesting	0582 414991	
Reflex BBS	0703 685527	V21/22/22b/23
Regency BBS	0542 33050	V21/22/23
Remotelpcw	0555 851887	V21/22/22b/23
Rivendell	0602 640488	V21/22/22b/23
Rm Tech. Support	0865 796431	V21/22/22b/23
Road Runner	061-483 4105	V21/22/22b/23
Royalink Uk	0962 66807	V21/22/22b
SAC BBS	0242 260685	V21/22/23/22b
Sas BBS	0742 325232	V21/22/22b/23
Satellite Southwest	0392 53116	V21/22/22b/23
Scabbs	0909 479080	up to 2400
Scary Monster	0734 320297	Hst
Scot Air	0505 36036	V21/22/22b/23
Scothelp-St	031-343 6368	V21/22/22b/23
Scottish Opus	041-880 7863	V21/22/22b/23
Scottish Wildcat	0674 671141	V21/22/22b/23
SCS One	0444 236002	V22b
Sector	0772 454328	V23v
Semaj Qbbs	0303 862415	V22/22b
Sentinel Bb	0628 781429	V21/22/22b/23
SES Databoard	0622 630240	V21/V22/V22bis
Shades	0342 810905	V23
Shadowfax	0252 528146	V21/22/23
Shadowland	081-897 0488	V21/23
Shasby's Lair	0772 561066	Hst
Sherwood Forest	0602 397113	V21/22/22b/23
Short Circuit	0273 462967	Hst
Sid (acorn Service)	0223 243642	V23v
Sigma Four	081 330 7738	
Signal Box	081-337 6583	V21/22/22b/23
Sin Bin	0532 661536	V23
Sirius	081-542 3772	V21/22/22b/23
Sirius II	0494 778425	V21/22/22b
Six And Five Eights	0273 688888	V22/V22bis
Skull	0379 740972	V22/V22bis
Skull's Tower	081-943 1194	V21/22/22b/23
Sky-line	0603 742273	V21/23/23v
Skyline 1	0234 741691	Hst
Softmatic BBS	0733 322540	V21/22/22
Software Source	0892 661149	V22/22b
Sorcerer's Dungeon	0636 815705	
Sounds [redacted] Mercia	0203 682896	V21/22/22b
South Lincs BBS	0780 63954	
Sparx	0793 480287	V21/22/22b/23
Pook BBS	0268 767365	V21/22/22b/23
Sphere BBS	0294 221350	V21/22/23/22b
Spuds Xanadu	0203 695266	V21/V22, V23, V23b
Sputnik Spitfire	0501 31754	V21/22/22b
St London BBS	081-443 2432	V21/23
Stabb	0793 855176	V21/22/23/22b
Staines BBS	0784 465794	V21/22/22b/23
Starbase One	071-733 3992	V21/22/22b/23
Steve and Jackie	0703 650037	V21/V22/V22b/V23
Strange Brew!	081-665 5038	V22/22b
Stun User Network	061-429 9803	V21/22/22b/23
Summer Wine	0484 653234	Hst
Sunburn Inc.	021-449 5269	V21/23
Super Ops BBS	0782 284081	V21/22/22b
System-c-v	0403 50607	Hst
TABBS	0533 517615	V21/22/23
Tabbs	0225 743797	V21/22/22b/23
Taecomm	0994 6709	V21/23
Taff's Retreat	0834 4562	V21/22/22b/23
Tardis	0772 27236	V21
Tasque	0355 222664	Hst
Tasug Opus	0904 760129	V21/22/22b/23
Tavern	081-445 6514	V21/22/22b/23
Tbbs-rovoreed	081-542 9767	V21/22/22b/23
Tequila Sunset	0703 867786	V23v
Terminal Net 5	0402 456135	V21/22/22b/23
Terminal-net	081-423 5262	V21/22/22b/23
Tharr BBS	0234 261804	V22/22b
Third Wave	071-585 3163	V21/23
Three Kings	0354 56267	V21/22/22b
Track 83	0953 851351	V21/22/22b/23
Transylvania	0274 621668	
Tranz-com BBS	081-952 6273	V21/23
Trinity I	0392 410210	V21/22/22b/23
Trinity II	0367 22764	V21/22/22b/23
Tug II	0905 775191	V21/22/22b/23
Twilight Zone	081-788 0884	V21/22/22b/23
Twilight Zone II	071-608 1485	Hst
Uk Healthlink	0942 722984	V21/22/22b/23
Unisys Etoi BBS	081-453 5739	V21/22/22b/23
Unit One	0285 713688	V21/22/22b
VITAS	021-749 5860	V21/23
Valente'S BBS	071-978 2078	Hst
Vector System	0329 45824	Hst
Viking East Anglia	0255 503048	V23v
Village	081-464 2516	V21/22/22b/23
Village Fayre	081-841 5971	V23
Voyager BBS	061-725 9580	V21/22/22b/23
West Norfolk	0553 761290	1200/2400
White Lightning	0635 37259	V22/22b
Whitehall Pent	071-930 3903	V21/22/22b/23
Wild Imaginings	091-263 4303	V21/22/22b/23
Winchester Remote	0962 69322	V21/22/22b/23
Wolverhampton ROS	0902 745337	V21/22/22b/23
Womble Base	081-979 9606	V23
Woodgreen BBS	081-889 5624	V21/23
Yugo BBS	0734 753648	V21/22/22b/23
Zeus BBS	0487 710487	V21/22

Get yourself listed!

If you run a user group or bulletin board, don't miss out on this essential service – fill in this form for a free entry and send it to Express On-line, 30 Monmouth Street, Bath BA1 2BW.

Name of group/BBS (Delete as applicable) .....
Address: .....
.....

- Write your ad in block capitals on the grid below using one letter per block. It will appear in full for the first week then the relevant details will be printed in the main listing after that. Information for bulletin boards should include details of baud rates, times on-line and the machines they are for as well as the telephone number.
- Also, please let us know if any of the information is out of date

Tim Smith's CENTREFOLD

Write to 30 Monmouth Street, Bath BA1 2BW
(The interleaves are on the trees)

OPENING TIME

VAT rises. It's only just dawned on many people that VAT has gone up by 120 per cent. This is, of course, if you take into consideration the year on year, cross indexed, price ratio calculation which came free with Normo Labbatt's copy of *Mini Office Professional*.

What will this mean for computers and computer users? Well, because we've all had to give up going to the pub and the cinema because a pint of wallop costs £4.50, and a ticket to the flicks will set you back £120, it appears that the only reasonable pastime is staying at home with your favourite computer or, dare I say it, console.

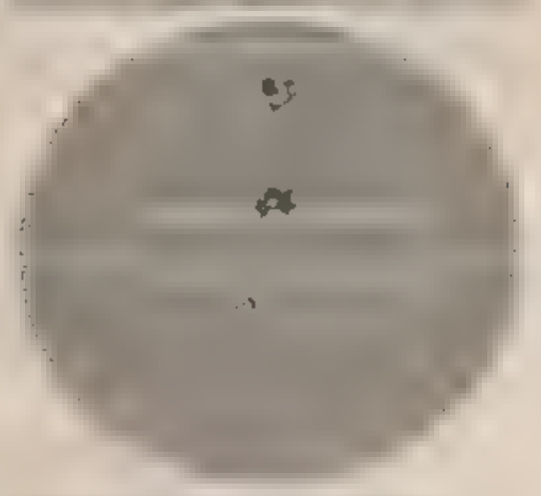
Politics eh? It tells you something about that particular field of endeavour when the only two games ever to be released for it were *Yes Prime Minister* and *Yes Chancellor*. Have fun!

JUST WHAT ON EARTH DO THESE COMPUTER GAMES THINK THEY ARE ANYWAY?

The first in an occasional series which aims to bring a fresh look at games. This week, Matt Crapper (78)

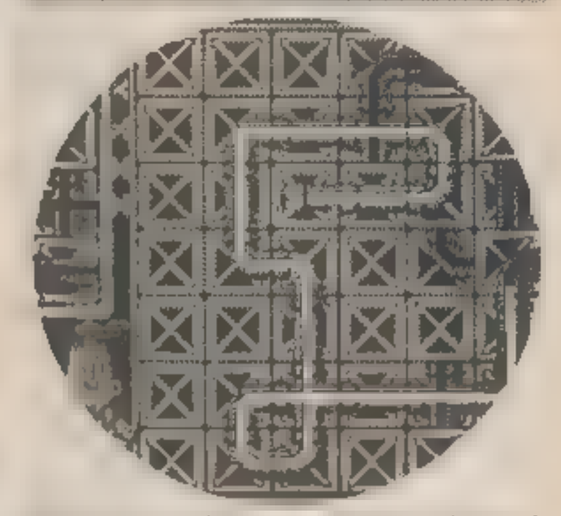
Prince of Persia is one of those games which makes you sit back and say: "Good Lord James of Adrossan and the Islands but this is pretty impressive stuff for a computer. I remember back in the 30s when there were no such things as computers or games, let alone Persia. We owned Persia back then I think ... we owned most things didn't we? Anyway the best point about this game is the way the little fellow in the jim-jams toddles about the place. He's after a woman you know, I remember women although I don't think that jim-jams will impress the wench.

TIP: Lose the pyjamas.



Kick Off II. I remember seeing the Matthews Cup Final in '51, or was it '54 or '57? The players weren't as small as this lot and the shorts were longer. It seems like a good game to me although I would like to see the winning team cheering the losers off at the end. It's only right and proper isn't it?

TIP: Make your shorts longer and cheer the losers.



Now this one foxed me and the ghost of the missus quite a bit. My pipes are nothing like this at all. I have a selection of some 12,000 pipes and as far as my banana, sorry memory, tells me none of them have ever been full of nasty fluid. In fact that fluid is quite like the stuff that Spiffy Montague made as soup during Suez. Disgusting, I don't think that this kind of thing should be allowed. What's wrong with Campbell's Pea and Pilchard soup anyway? So, the point of this game appears to be to stop your pipe filling up with Squiffy Montague's concoction.

TIP: Always use Wade's pipe cleaners.

TEN THINGS YOU NEVER KNEW ABOUT *EXPRESS*

1) Andy Storer once programmed for the SAS and CIA. He left becausae: "I was looking for a challenge"

David Golder thinks he is working for the *Daily Express*.

3) The *Express* office consists of five areas: News room (12 x 12), Art/Production Area (12 x 12), Features zone (12 x 12), Editor's suite (13 x 14), and Keith's Fetteling Parlour/Old Computer Sanctuary (46 x 78).

4) Julie Tolley's favourite way to spend the weekend is at the All Format's Show or Sinclair User Group meetings.

5) Keith once managed to save a 747 by fetteling a CPC 6128 to the automatic pilot

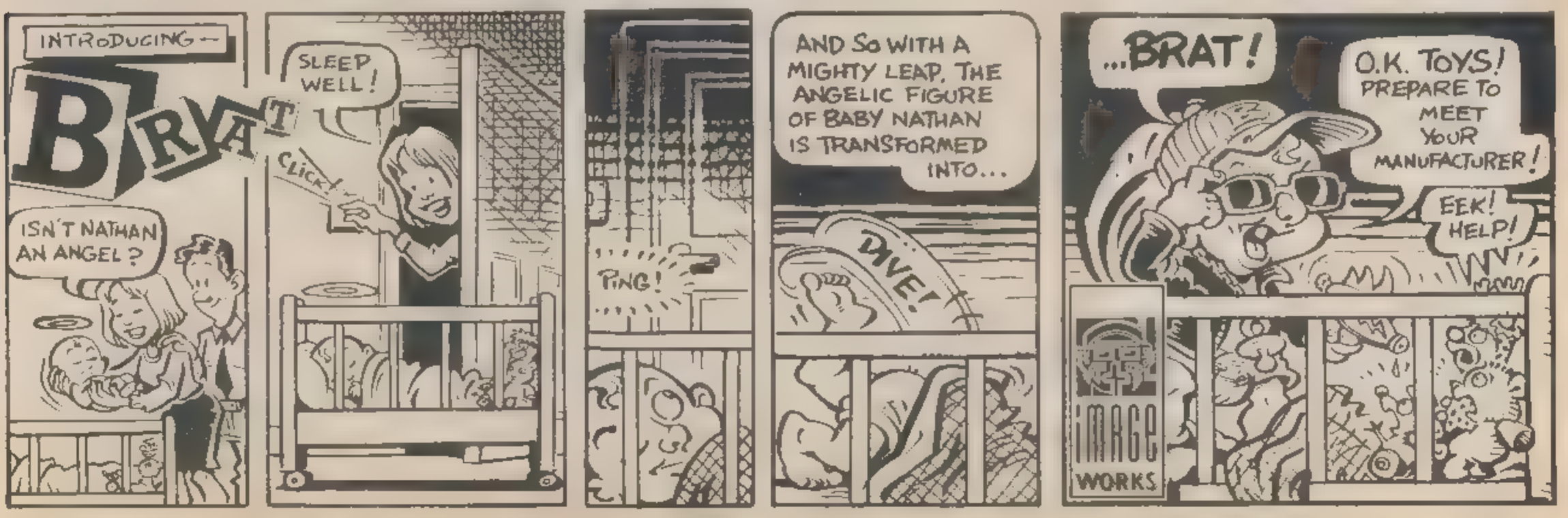
6) Haydn Fitz-Williams is 5,00,282nd in line for the throne.

7) Amanda Cook keeps an Magnum 357 by her desk: "Because you never know when someone might try to plant a virus on your Mac"

8) NCE is an anagram of CEN, a word meaning 'of great joy and charisma' in virtual Croation.

Er....

10) That's it.



The real adventures of Brat to be released on Amiga and ST in April

GOLDEN IMAGE™ OFFICIAL DISTRIBUTOR

OPTO-MECHANICAL MICE

Atari ST	£19.95
Commodore Amiga	£19.95
ST/Amiga switchable	£24.95
IBM Serial	£24.95
IBM PS/2	£19.95
Amstrad PC Bus	£19.95

TRACKBALLS

Commodore Amiga	£39.95
Atari ST	£39.95
IBM PC Serial	£39.95

HANDSCANNERS

ST with Touch-Up	£199.95
Amiga with Touch-Up	£199.95
IBM PC Multi-directional	£199.95

CORDLESS MICE

Atari ST	£39.95
Commodore Amiga	£39.95
IBM PC Serial	£39.95

THE BRUSH

The brush is a new slim mouse which is used like a pen.
It's ideal for artists.

Amiga	£39.95
ST	£39.95

OPEN TO THE PUBLIC

Prices include P&P and VAT at 17.5%

Overnight courier service available at extra cost

Please telephone for availability

OPTICAL MICE

Atari ST	£35.95
Commodore Amiga	£35.95
ST/Amiga switchable	£39.95
IBM PC serial	£39.95
IBM PC with Dr. Halo	£49.95
Amstrad PC bus	£35.95

RAM CARDS

2Mb Amiga 500 expansion unpopulated	£29.95
2Mb Amiga 500 expansion populated	£129.95
512K Amiga 500 expansion	£29.95
2Mb Atari ST expansion unpopulated	£29.95
2Mb Atari ST expansion populated	£149.95

Golden Image (UK) Ltd,
Golden Image House,
Fairways Business Park,
Lammas Road, London, E10 7QT
Tel 081-518 7373 Fax 081-518 7585

Trade Enquiries Welcome

Credit card orders accepted by phone.

Atari ST, Commodore Amiga, Amstrad and IBM are all registered trademarks of their respective owners

C SERIES: PART TWO

In the second part of an introduction to the C programming language Mary Branscombe explains loops, arrays, structures and functions . . .

First let us consider control in terms of C The simplest form of conditional statement is: `if expression statement1` When an alternative action is possible, this becomes: `if expression statement1 else statement2`.

You can use another conditional statement as the expression to test, or the statement to obey, which results in nested conditionals. These can seem ambiguous, but if there's any doubt, an 'else' statement is attached to the most recent 'if' expression. So:

```
if (x <= 0) if (x < 0) printf("Negative number"); else printf("Zero");
```

should be read as:

```
if (x <= 0)
{ if (x < 0) printf("Negative number");
else printf("Zero");
}
```

rather than:

```
if (x <= 0)
{ if (x < 0) printf("Negative number");
} else printf("Zero");
```

The latter interpretation would tag every number above zero as zero, which is clearly not what we want.

A terser version of this does away with the keywords. To distinguish negative and positive integers, ignoring zero, the expression would be:

```
x < 0 ? printf("Negative number"): printf("Positive number");
```

This form of the conditional is most useful inside another statement. If you want to add the larger of a pair of numbers to a total, you could use:

```
total = (a < b? total + b : total + a);
```

rather than:

```
if (a < b) total += b; else total +=a;
```

The more complicated the expression, the more you save by not duplicating commands.

A case statement is provided by the switch statement, which has the form:

```
switch (letter)
{ case 'W': case 'w': printf("White Rabbit\n"); break;
      case 'M': case 'm': printf("Mad Hatter\n"); break;
  default: printf("I do not know that character\n"); break;
}
```

The variable `letter` holds the value given to the switch statement. Each case statement selects the action to be taken and the default statement provides a useful catch-all condition. You need 'break' after each of the case selectors so the machine will exit after the required command or the other commands will also be executed.

LOOPS

C has three loops: the 'while', the 'do' and the 'for' loops. The 'while' loop tests the loop condition before executing the body of the loop, the 'do' loop tests it ■ the end and the 'for' loop carries out the loop body as many times as the control statement directs. This is a more complicated than in other languages:

```
for (expression1; expression2; expression3)
statement
```

Expression1 is evaluated before the loop is entered and ■ often used to initialise the control variable, expression2 is the control statement, giving the bounded limit of the control variable, and expression3 is usually used to update the control variable, as it is executed with the statement as the loop body. To print the integers from one to ten, incrementing the control variable by one and printing its value, this 'for' loop could be used:

```
main()
{ int i;
 for (i=1; i<11; i+=1)
 printf("%d\n", i);
}
```

A loop can terminate from the middle of the loop body using a conditional statement which results in the break statement.

ARRAYS

An array is a set of data in the form of a table and this is declared simply enough. For example:

```
int a[100]
```

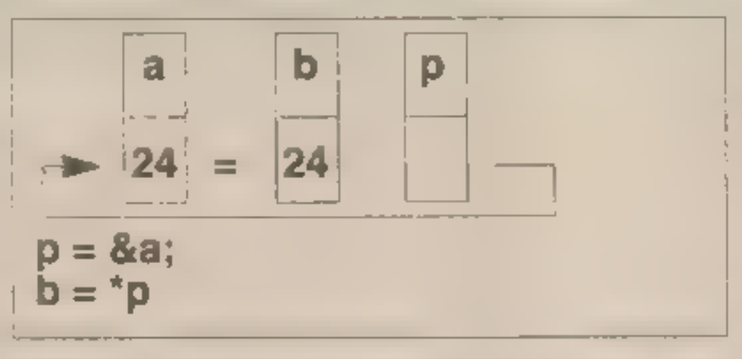
gives you an array of integers, indexed from zero to one hundred. The dimensions of an array must be specified as numbers or constants defined at the beginning of the program, as in:

```
#define LENGTH 100
```

LENGTH can be used throughout the program for one hundred. Variables cannot be used for the dimensions of an array because the value of a variable can change, but the size of an array cannot. If you want an array whose dimensions can vary during the program's execution, you need C++, which we will look at next. A multi-dimensional array is given two indices:

```
table [i] [j]
```

To step through an array, an incremental 'for' loop is typically used, increasing the value of the index variable each time round the loop. Evaluating the name of an array gives you its address in memory. To find the nth element of an array, we look n bytes further on in memory than the address of the start of the array. This means that the only information about the array that you need to pass around the program is the name, which simplifies matters enormously. Any variable that returns the address of any object is called a pointer, because it points to the object.



If we say ■ = &a; then p points to the address of variable a. We can then assign the value that p points to, which is the value of a, to another variable b. This is ■ = *p; the asterisk says "retrieve the value at the address that p points to." This is indirection and these two mechanisms give us a powerful way ■ pass values around a program. If we pass only the value of a variable, we cannot change the variable's value; to do that we need the address, as given by the pointer.

STRUCTURES

To store data in something more structured that an array, C provides the singly- and doubly-linked lists that we have seen before. Any other structure you want can be defined as an object of type `struct`, which is like a record in Pascal, or a filing card in a card index, and this is an important feature for object-oriented programming.

A `struct` can be as complex and complicated as you need, but he basic form should be:

```
struct structure_name
{ type1 member1;
type2 member2:
type3 member3, member4;
};
```

To store the code number, name, weight and length of an object, we can define the `struct` object:

```
struct object
{ int code;
char name[20];
float weight, length;
};
```

We can now declare variables of type `struct` to store specific objects:

```
struct object object_one, object_two;
```

Members can be assigned to a variable of type object:

```
object_one.code = 11;
strcpy(object_one.name, "Pencil");
object_one.weight = 11.8;
object_one.length = 12.1;
```

Both structures and the addresses of structures can be passed as arguments to functions. Passing the address is more efficient, as no copy is made of the structure, but passing the structure makes it easier to access the members of that structure.

FUNCTIONS

A function takes the form:

```
function_name(type1, parameter1 ... typen, parametern)
{declare any variables;
body of function;
return(variable_name)
}
```

If the function returns the value of a variable, this variable must be noted in `return(variable_name)`, which makes the program jump back to where the function was called. A function should be declared with its parameters at the beginning of the main function, so that the compiler can type check as soon as the function is called, rather than when the compiler reaches the code for the called function. A function can be declared and used inside another function or it can be declared at the top level and used throughout the program. ■

What do you need to sort out? We'll be covering algorithms for sorting and searching - tell us what you want to use them for and we'll look at how to do it

SHAREWARE & Public Domain

(number of disks in brackets)

IBM

THE AMERICAN CIVIL WAR	(1)
Battleground	(1)
Tactical Combat Simulator	(1)
GLOBAL WARFARE	(1)
OGRE - Tanks in 21st Century	(1)
Air Traffic Controller	(1)
Spacewar	(1)
NO BEER	(1)
EGATREK	(2)
Triclops Invasion	(1)
Galactic Conquest	(1)
Time Traveller	(1)
Captain Comic	(1)
BIG RIG - 18 Wheeler!	(1)
Frigate	(1)
Under The Tree	(1)

CATALOGUE WITH EVERY ORDER

AMIGA

FROM PREMIER OF U.S.A

DESKBENCH	(3)
Toolkit	(5)
Something for NOTHING	(2)
Animations Set	(7)

GAMES COLLECTION

70 of the best games	(6)

CATALOGUE WITH EVERY ORDER

DISK PRICES: 1-4 £3 each
5 - 10 £2.50 each
10+ £2.00 each
Plus £2.50 P&P with all orders
Credit cards accepted

S I·L·K Software

158 London Road South, Lowestoft, Suffolk NR33 0BB
Tel: 0502 582618 Fax: 0502 517057

BILL'S GONE BANANAS!!!

PC's AT CRAZY MONEY LOOK FOR YOURSELF

NEW HARD DISKS

Seagate

3½" TYPE	Controller	Size	Speed	Price
ST 124	MFM	20Mb	40ms	£130.00
ST 125-1	MFB	20Mb	28ms	£150.00
ST 138R-1	RLL	32Mb	28ms	£155.00
ST 151N-1	SCSI	49Mb	28ms	£179.00
ST 157A	IDE	44Mb	28ms	£129.00
ST 1102A	IDE	89Mb	19ms	£249.00
ST 1144A	IDE	124Mb	19ms	£295.00
ST 1201E	ESDI	177Mb	15ms	£575.00

5¼" TYPE	Controller	Size	Speed	Price
ST 225	MFM	21Mb	65ms	£120.00
ST 225R	RLL	21Mb	70ms	£120.00
ST 238R	RLL	32Mb	65ms	£140.00
ST 251-1	MFM	42Mb	28ms	£160.00
ST 277R-1	RLL	65Mb	28ms	£180.00
ST 2125N	SCSI	110Mb	18ms	£465.00
ST 2274A	IDE	240Mb	16ms	£795.00

286AT 40Mb hard disk 28Ms '0' wait state
IMb RAM 1.44 or 1.2Mb floppies + mouse
VGA colour as standard 102 keyboard
FULL ONE YEAR RETURN TO BASE WARRANTY
FOR ONLY £715.00 + VAT

386SX Spec as above.....only £945.00
386SX 106 Mb HDisk.....only £1195.00

ALL PRICES EXCLUSIVE OF VAT + DELIVERY

SPECIAL OFFER
EMS Memory Boards 4Mb
1Mb populated £149.00
Controller Cards XTAT from £22.00

VGA MONITORS
800 x 600 from £195.00, 1024 x 768 from £205.00

KEYBOARDS
Enhanced keyboards from £35.00
Full range of printers and consumables

Just lift the phone and ring Bill Russell on 0491 613931
Giltlink Ltd, enquiries by post to:-
Scotts House, Cuxham Rd, Watlington, Oxon OX9 5JW

MCD

COMPUTER AUCTIONS

FOR SALE BY AUCTION

SATURDAY 27th

St Pauls School, The Ridings
Green Street, Sunbury-on-Thames, Middx
(½ mile from junction 1 of M3)

Wide selection of up to date PC's, printers and software

Phone 0836 726356 (mobile phone)
for details

MEGADRIVE

UK Megadrive + Alt Beast	£149.95
JPN Megadrive Pal + game	£139.95
JPN Game Adaptor	£14.00
Arcade Power Stick	£35.00
Joy Pad	£14.00
SG Jetfighter	£14.95
Scart Lead	£14.00
Stereo Lead	£8.95

NEW GAMES

Aero Blasters	£35.00
Celtics vs Lakers	£35.00
Darius II	£35.00
Devil Hunter	£35.00
Elemental Master	£26.00
Fantasy Soldier III	£35.00
Gaiares	£35.00
Gynoug	£35.00
J M American Football	£35.00
Joe Montana Football	£35.00
Junction	£28.00
Ka Ge Ki	£38.00
Magical Hat	£28.00
Midnight Resistance	Call

SPECIAL OFFERS

Battle Squadron	£28.00
Curse	£16.00
Dangerous Seed	£24.00
Hard Drivin	£26.00
Heavy Unit	£24.00
Hell Fire	£19.00
Klax	£23.00
Mickey Mouse	£24.00
Strider	£29.00
Sword of Vermilion US	£37.00
Whip Rush	£16.00

SPORTS AND SIMS

Super Volley Ball	£33.00
Italia 90	£33.00
Ringside Angels	£33.00
Super League Baseball	£33.00
Super Monaco GP	£33.00
Super Real Basketball	£33.00

NINTENDO

Nintendo Action Set	£94.00
New Advantage	£37.00
Nes Max Turbo	£26.00
Python 2 Joystick	£9.50
Cart Cleaning Kit	£9.99
Bayon Billy	£37.00
Black Manta	£35.00
Double Dragon	£37.00
Double Dragon II	£37.00
Mega Man II	£38.00
Paperboy	£38.00
Pinbot	£37.00
Probotector	£37.00
Snake Rattle Roll	£37.00
Solar Jetman	£38.00
Stealth ATF	£37.00
Super Mario II	£38.00
Super Off Road	£37.00
World Wrestling	£37.00

CALL FOR ALL SECOND HAND SWAPS AND GAMES

FAMICOM

Famicom + 2 Joy Pads + 2 Free Games	£299.00
Bomb Buzai	£29.00
F-Zero	£40.00
Final Fight	£44.00
Gradius II	£40.00
Pilot Wings	£44.00
Populus	£40.00
Big Run	£44.00
Super Mario World	£40.00
Hole In One Golf	£40.00
R-Type II	Call
SD The Great Battle	£40.00

PC ENGINE hand held
£245
Including Game

GAMEBOY

Gameboy + game	£59.00
Gamelight	£9.99
Game Pack Carry Case	£7.99
Hard Carry Case	£10.99
Compact Carry Case	£23.95
Balloon Kid	£19.00
Bases Loaded	£24.00
Buna Fighter	£24.00
Bugs Bunny	£24.00
Double Dragon	£19.00
Dragon Man	£24.00
Ghostbusters II	£24.00
In Your Face	£24.00
Kwirk	£24.00
Paperboy	£24.00
PA Football	£24.00
Revenge of Gator	£19.00
Robocop	£24.00
Spiderman	£19.00
Teenage Mutant Ninja Turtles	£24.00
Wrestling	£24.00

We also buy and part exchange used cartridges. Many more items for other consoles and computers in stock please phone for more details and ask for ADAM or PETE or call in to the shop

LYNX

Lynx Console + power supply + California games £117.99
Blue Lightning, Electrocop, Klax, MS. Pac-Man, Paperboy, Roadblasters, Robo Squash, Rygar, Slime World, Xenophobe, Zarlor, Mercenary.

All above games	£27.00
Lighter Power Adaptor	£11.95
Power Supply	£12.99

All prices are correct at time of print and may be subject to change without prior notice.
Post and Packaging £1 per order and £5 per console. Trade enquiries contact Pete.

KC's Computer Emporium

37 Pinfold Gate, Loughborough
Leics, LE11 1SG
TEL (0509) 211799 FAX (0509) 881600

AMIGA 500 ASTRA PACK £349

Includes 10 Games:
Datastorm, Dungeon Quest, Grand Monster Slam, E-Motion, Kid Gloves, Powerplay, RVF Honda, Shufflepuck Cafe and Tower of Babel.

AMIGA SCREEN GEMS

1 meg £384.95 1 meg
Includes Days of Thunder, Shadow of the Beast, Nightbreed, Back To The Future II and Deluxe Paint
PLUS 20 free additional games

ALL AMIGA PACKS INCLUDE NEXT DAY DELIVERY AND VAT
ADD £1 FOR ALL OTHER ORDERS FOR P&P
LATEST GAMES AVAILABLE AT 30% OFF RRP

MONITORS

Philips 8833 MKII	£249
Commodore 1084S	£259

Both include cable

GAMES

U.M.S. II	£20.95
Swiv	£17.50
Pop Up	£14.00
Lemmings	£17.50
Super Monaco GP	£17.50
Awsome	£24.50

DISKS

3.5" DSDD		3.5" DSHD	
10	£3.20	10	£9.90
50	£15.50	50	£47.50
100	£30.00	100	£90.00
5.25" DSDD		**5.25" DSHD**	
10	£3.10	10	£4.90
50	£14.25	50	£24.00
100	£24.50	100	£45.00

BOXES

3.5"	10 caps		95p
3.5"	40 caps		£4.65
3.5"	80 caps		£5.75
5.25"	10 caps		95p
5.25"	50 caps		£4.65
5.25"	100 caps		£5.75
3"	20 caps		£3.95

FROM A TO B VIA Z

A suite of route planning software for the Amiga or PC at under £20. It looked too good to miss. Unfortunately it wasn't ...

When Yorkshire based Geographic advertised its *Door To Door* route planning software for the PC and Amiga, the sub £20 price tag made it look like a bargain.

We telephoned the number to ask for a sample to review, but always got the engaged tone or an incoherent answering machine. Eventually we managed to get through to a chap who identified himself as John Gold. He promised review copies and sung the praises of what he described as an innovative and exciting product. He talked of plans of integration of digitised maps allowing you to plan any route literally from door to door.

After this glowing description, we could hardly wait to see the product ... but in the event, we had to. And wait we did. A couple of weeks passed and it was impossible to get through to Geographic. *Express*'s advertising department was told about the delays with the review samples and decided to put Geographic on hold for a couple of weeks while we checked the product. And ■ good thing too.

In our conversation with John Gold, he had made reference to his team of programmers whose leader was no less than ■ doctor "You mustn't bother the good doctor who's much too busy," he said. Still needs must and we asked him how we could contact his team. "That's classified information and I can't tell you," he said. We'd been promised the review sample so we decided to wait ... and wait ... and wait.

THE PREY

As no review sample was forthcoming, we contacted a couple of *Express* stringers who had bought the product and borrowed a PC and an Amiga version of *Door To Door*. Both readers were disgusted and told us not to bother returning it as they weren't impressed.

THE REVIEW

Door To Door arrived in an envelope that had a disclaimer and licence that would have done justice to an American multi-national software company. In short, before you can get at the product or its scanty documentation, you have to break a seal that consigns your rights to the bin.

Once the seal is broken, you are on your own. First out of the bag was the PC version. It was supplied on a 3.5-inch generic disk with a tattily typed label that said *Door To Door*. We placed it in the drive of a portable in the office and ran the program. The screen stared blankly at us for a couple of minutes and just as we thought it had given up, the following text message appeared on the screen

```
FIND A ROUTE ? Y/N
```

On typing Y the screen changed to an initialisation procedure that lasted what seemed as long as *Gone with the Wind* and changed ■:

```
TYPE START TOWN (Q to QUIT)
```

We chose Chorley, a reasonably sized market town in Lancashire and Geographic tartly informed us that Chorley was not available. Not to be deterred we decided to ask a policeman directions from Chorley to Wigan and start from there. Wigan was included so we were able at least to start our journey.

The destination was Peterborough and the Nene Valley Railway. The trip from industrial Lancashire to the flatlands of the fens runs diagonally across country from the North West to the South East .

We hit the return key and waited. Waiting seems to have been the most prevalent feature in the whole Geographic saga. While we waited for it to calculate the journey, we nipped off to do a degree course, cook a 12 course chinese meal and paint the Forth Road Bridge. When we returned, it had nearly finished working out a route. Joking apart, there was a wait of a good five minutes before Door To Door offered its route

The route that it offered had us leaving Wigan to travel south on the M6 to the M62, crossing the Pennines in a north easterly direction then heading south along the A1.

A quick look at the map suggested four alternatives that would take less time and miles and a quick chat with the Greater Manchester Constabulary which patrols the highways and byways around Wigan confirmed that the A58/M61/M62 or A58/A579/A5082/A580/M62 routes would be quicker and more appropriate. An alternative route via Manchester and Sheffield was chosen by a local coach company with wide experience of the area and the route shown in Geographic was widely held as a nonsense.

Any program can have a glitch, so we picked another route in another area. Swindon to Stroud is ■ direct route North West on the A419 trunk road. Geographic agreed that the A419 was the road to use, but instead had us leave Swindon and travel South to the M4. The long trek West on the M4 took us to Almondsbury, west of Bristol, where we joined the M5 to travel North to Junction 13. Here we rejoined the A419 to arrive in Stroud from the West!

To avoid waiting a decade for any sort of result from the program, we installed it on a Goldstar 386 on test in the office. This powerful PC managed to pull *Door to Door's* socks up enough that we didn't need to wait too long to view the next silly route.

The Amiga version, if anything, was worse. Slower, more quirky and more difficult to use. When we eventually persuaded it to provide us a route, the route was as bad and as silly as the PC routes. Installing it on a hard drive speeded things up, but not by any great shakes.

WHERE'S MY PROGRAM?

Normally a review is confined to the product and its features, but on this occasion there has been more said about the company than *Door To Door*.Those who have received the product and written to Express have complained that the product is seriously flawed. Several other potential purchasers have written to complain that their program hasn't arrived even though the cheques have been cashed. Many readers have complained that Geographic has changed its telephone number without informing anyone.

Second down the list of complaints ■ that the product does not match its description. When advertised, digital maps were promised. No one received them.

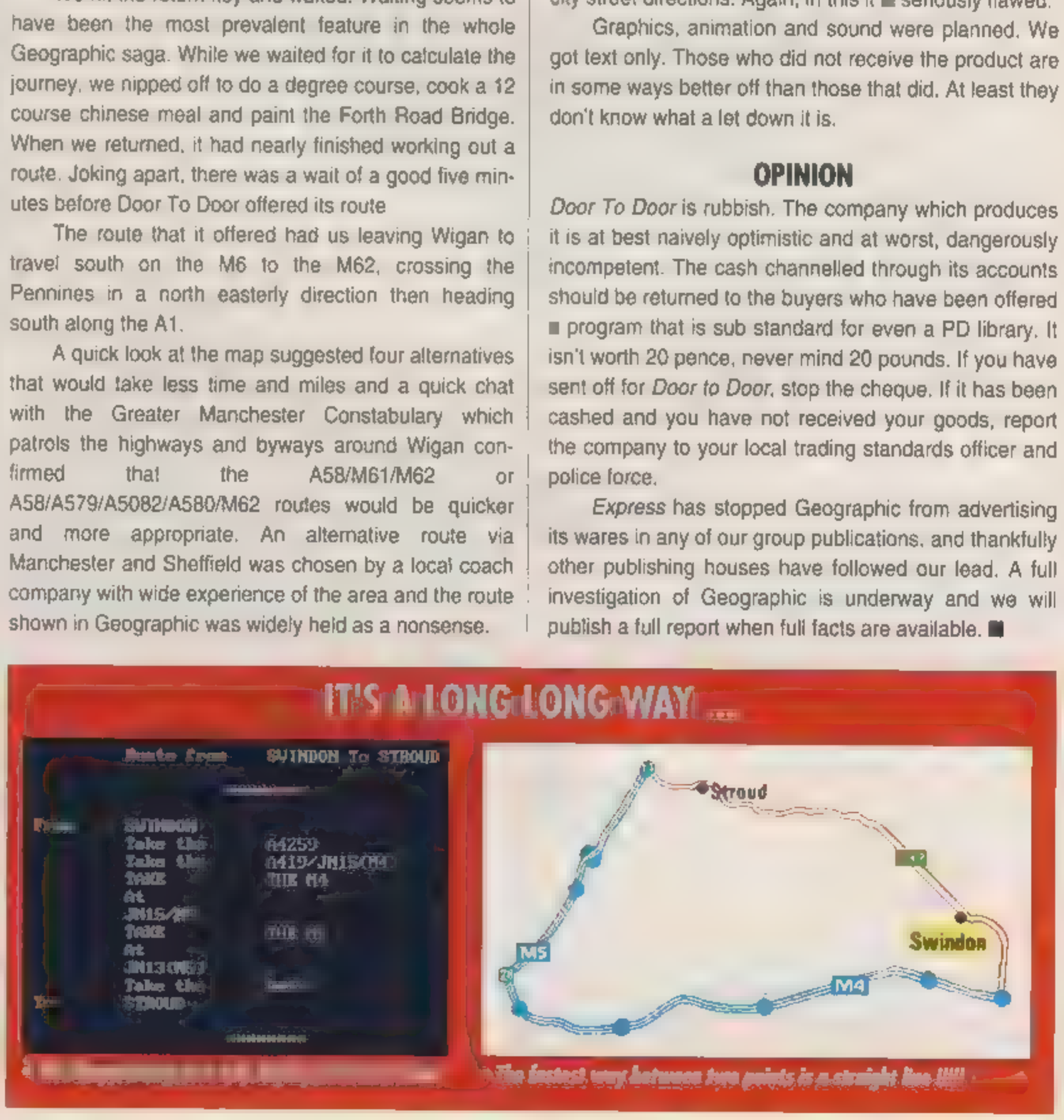
Extra add on modules were planned, but we have not had sight or sound of those either. *Door to Door* was sold as a business package capable of organising inner city street directions. Again, in this it ■ seriously flawed.

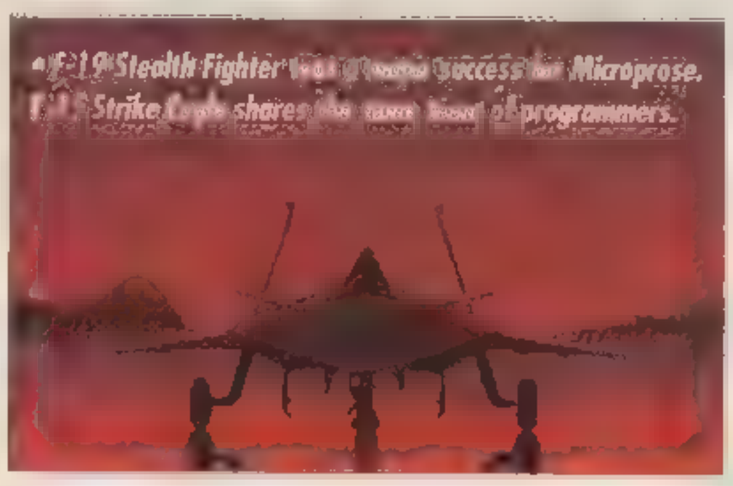
Graphics, animation and sound were planned. We got text only. Those who did not receive the product are in some ways better off than those that did. At least they don't know what a let down it is.

OPINION

Door To Door is rubbish. The company which produces it is at best naively optimistic and at worst, dangerously incompetent. The cash channelled through its accounts should be returned to the buyers who have been offered ■ program that is sub standard for even a PD library. It isn't worth 20 pence, never mind 20 pounds. If you have sent off for *Door to Door*, stop the cheque. If it has been cashed and you have not received your goods, report the company to your local trading standards officer and police force.

Express has stopped Geographic from advertising its wares in any of our group publications, and thankfully other publishing houses have followed our lead. A full investigation of Geographic is underway and we will publish a full report when full facts are available. ■





GAMES WEEK

Neil Jackson gives you his final low-down on the latest new games, playing tips, cheats and news.

Now that Saddam Hussein has finished his winter offensive, Microprose ■ about to start its spring one, with the launch of its ***F-15 Strike Eagle II***. First seen on the PC-compatibles, way back in 1989, this vector flight-simulation is now destined for the 16-bit market

The job of converting from PC to Amiga and ST falls to the same team that handled ***F-19 Stealth Fighter***, so Microprose is hopeful that F-15 will be as successful as its earlier counterpart. F-19's vector-engine provides the basic 'core' of the new program, but with significant re-development and enhancements. ***F-15 Strike Eagle II*** comes complete with a more modern ■ realistic HUD and flight control panel, graduated horizons, improved frontend sequences and better colours. Sound effects, music and sampled sound are all also in the process of being upgraded.

Differences in gameplay (when compared ■ the PC version) include the addition of missions to destroy ground targets, convoys and the option to choose the amount of weapons you take. There's also ■ huge playing area, encompassing places like Libya, the Persian Gulf, Vietnam and the Middle East (which all appeared on the PC) plus Central Europe and the Northern Cape (which were developed as part of F-19). Released dates are expected to be May for the Amiga and June or July for the ST. Both will be on sale at £29.99.

Meanwhile, in a dark corner of Sicily, moves are afoot to make Mafia history – the Family are at last to make an appearance on home computer! US Gold has secured the licence to ***The Godfather Part III***, Francis Ford Coppola's latest film centred on the life of the Corleone Family. This ■ the third and final part of the trilogy of films, based on Mario Puzo's award-winning novel, which details the rise and fall of an immigrant Italian lad (Vito Corleone) who makes a name for himself in the exortion and protection business. 'Don' Corleone eventually gives way to Michael Corleone, his son, who in turn takes over the reins of the Family business.

Part III ■ concerned with Don Michael's desires to turn the business into ■ legitimate operation, by investing heavily in the church. In the process, much dirty work is done by Vincent Mancini, son of Michael's elder (and dead) brother. All gripping stuff, with the usual climatic ending, but Games Week wonders how this is all going to work on computer!

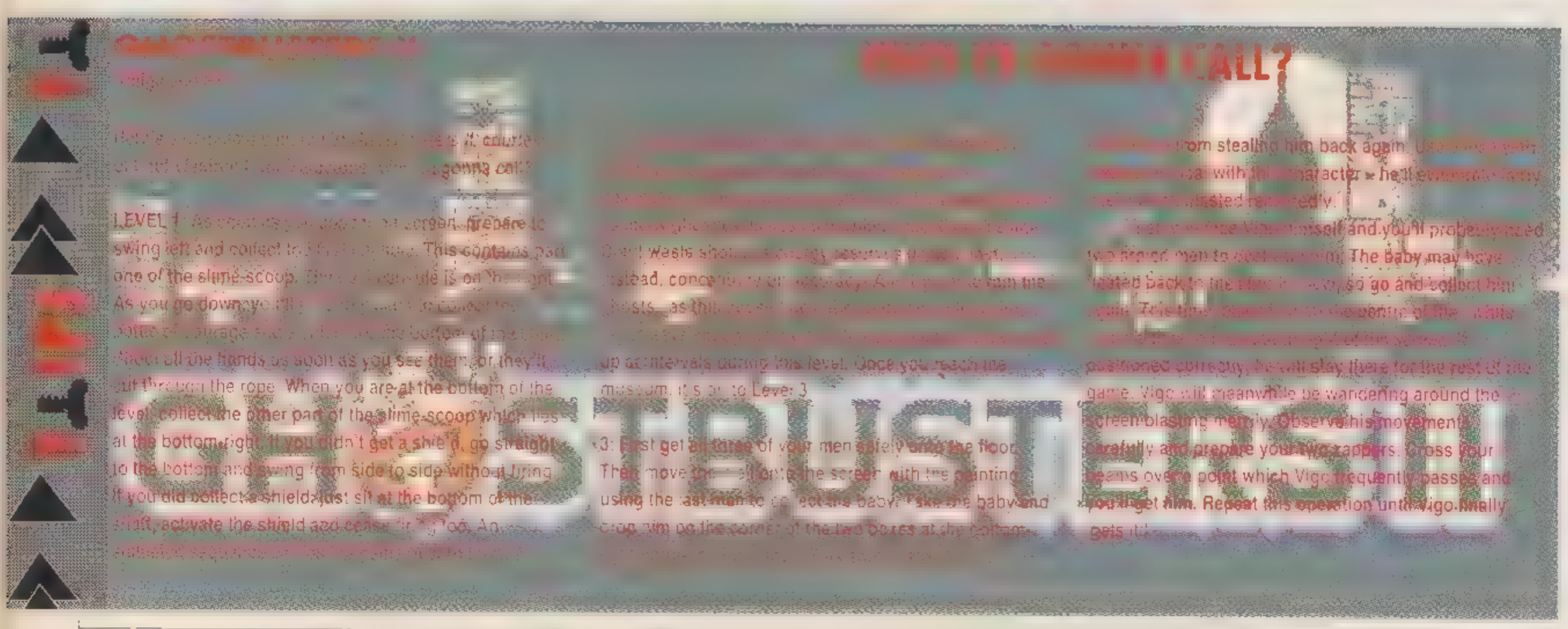
The job of turning this masterpiece into a computer work-of-art falls to Creative Materials Ltd, ■ Manchester based-company with much experience in computer games design. At this stage they're being very tight-lipped about what they have in store, but they told Games Week "It's not going to be ■ simple boring shoot-'em-up." And we're all remarkably glad to here that, aren't we? More news on this subject, as soon as we can convince US Gold and CML ■ "spill the beans". If you could just give us a hand with this horse's head.■

TOP 10 SIXTEEN-BIT GAMES

1		
2		
3		
4		
5		
6	World	
7	Stealth Fighter	
8	Steve Davis	
9	Super Grand Prix	
10		

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible OT = Other
Chart compiled by Gallup. © European Leisure Software Publishers Association

• Michael Corleone and his lovable, happy-go-lucky family are the subject of a forthcoming US Gold Godfather game.



CYBERCON 3

US Gold • Amiga and ST • £24.99

The halls of the Mountain King

At last, US Gold's much-talked about cyber-nightmare is upon us. *Cybercon 3* is a dark, scary world of even darker, scarier computer-madness. It's set in a futuristic world, where a giant computer system, known as the Cybercon, controls the country's entire military defence force. It's apparently been around for a while, and has undergone at least two changes of identity, but the third incarnation has developed a few irrational trains of thought. So much so that it's decided to exterminate all the humans it can lay its remote-controlled hands on.

Cybercon 3 resides deep inside a huge mountain, safe from enemy bombing. All entrances (bar one) to the mountain have been sealed off by a landslide which was engineered by *Cybercon 3* itself. In this virtually-impenetrable state, it sits, and thinks and plots the destruction of the humans.

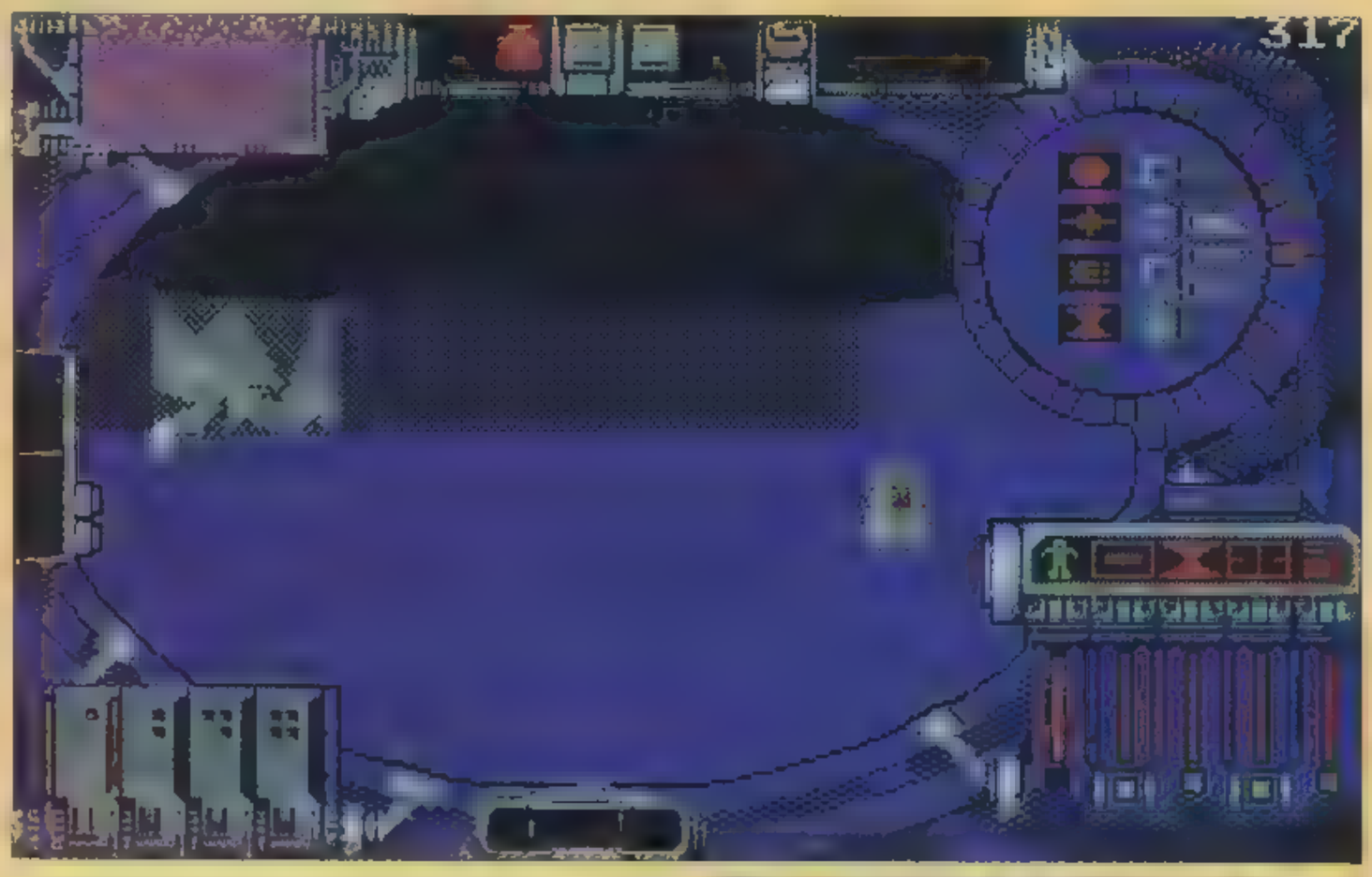
And, surprisingly enough, this is where you come in. Although *Cybercon 3* is veritably a hard nut amongst the hardest of hard nuts, it must be destroyed. It does have one tiny design flaw which you may be able to put to your advantage. It has a vulnerable part – a brain stem, which control its central nerve system. If you can get in, blow up the brain stem and get out again, things might just be alright.

You start off in a dark corner of the big underground base, with a few token goodies to play with. The game is immediately tough on you, presenting you with a wealth of logic-solving and lateral puzzles, just to get your power-assisted suit working and then get the main door open. Assuming you can do this, you're then able to traverse the 400 or so rooms which make up the base. To begin with they're fairly uninhabited, with little to hinder you, but soon things start to hot up, as the Cybercon's own defence mechanisms start to track you down. The deeper you go and the closer you get, the tougher it is to stay alive.

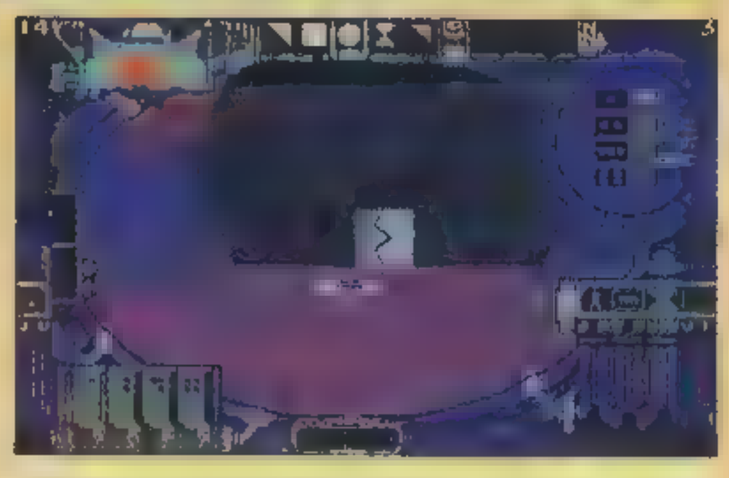
A vital part of the exploration is the mastering of the use of the Sonic Key, a strange device which is able to interrogate doors and some objects in order to find out how they operate. Using a special shape and colour sequence, doors can be opened, remote-controlled cameras can be switched on and directed and a wealth of other technology can be made to work for you.

However, working against you are several other factors. As you'd expect, your power suit is not infinite in its supply of power. When damaged, it takes a while to recover and recharge. This can be immensely dangerous, especially if you've been hit badly and are trying to run away. Then, the normally agile suit becomes so much dead weight, holding you back, making footsteps incredibly laborious. Getting out of the line of fire can be virtually impossible in this condition, and the only solution is to plan your route beforehand, avoiding the nasties. This takes several goes before you're able to build up a picture of the base's layout in your mind, and even then it's a dangerous affair.

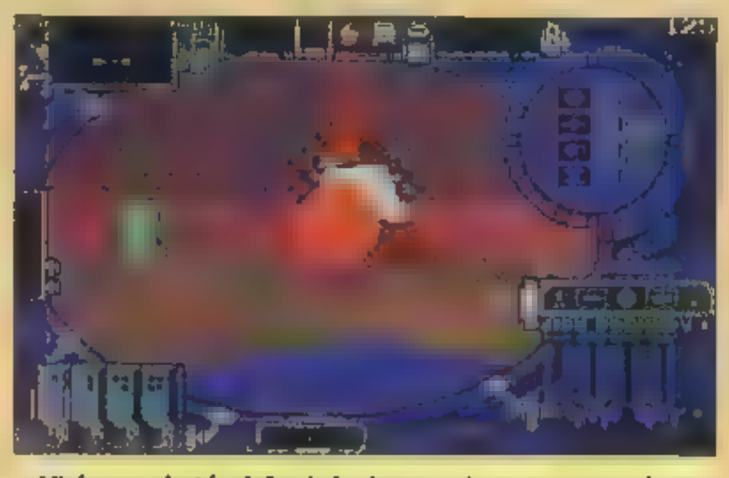
If vector-drawn 3D games light your candle even remotely, then *Cybercon 3* is for you. Its mimicry of the *Aliens*-type atmosphere – lots of darkened rooms, hidden surprises and deadly enemies – is superb. Vast chasms, transparent floors and miniscule walkways over deep abysses make for exciting gameplay and a lot of cold sweating too!



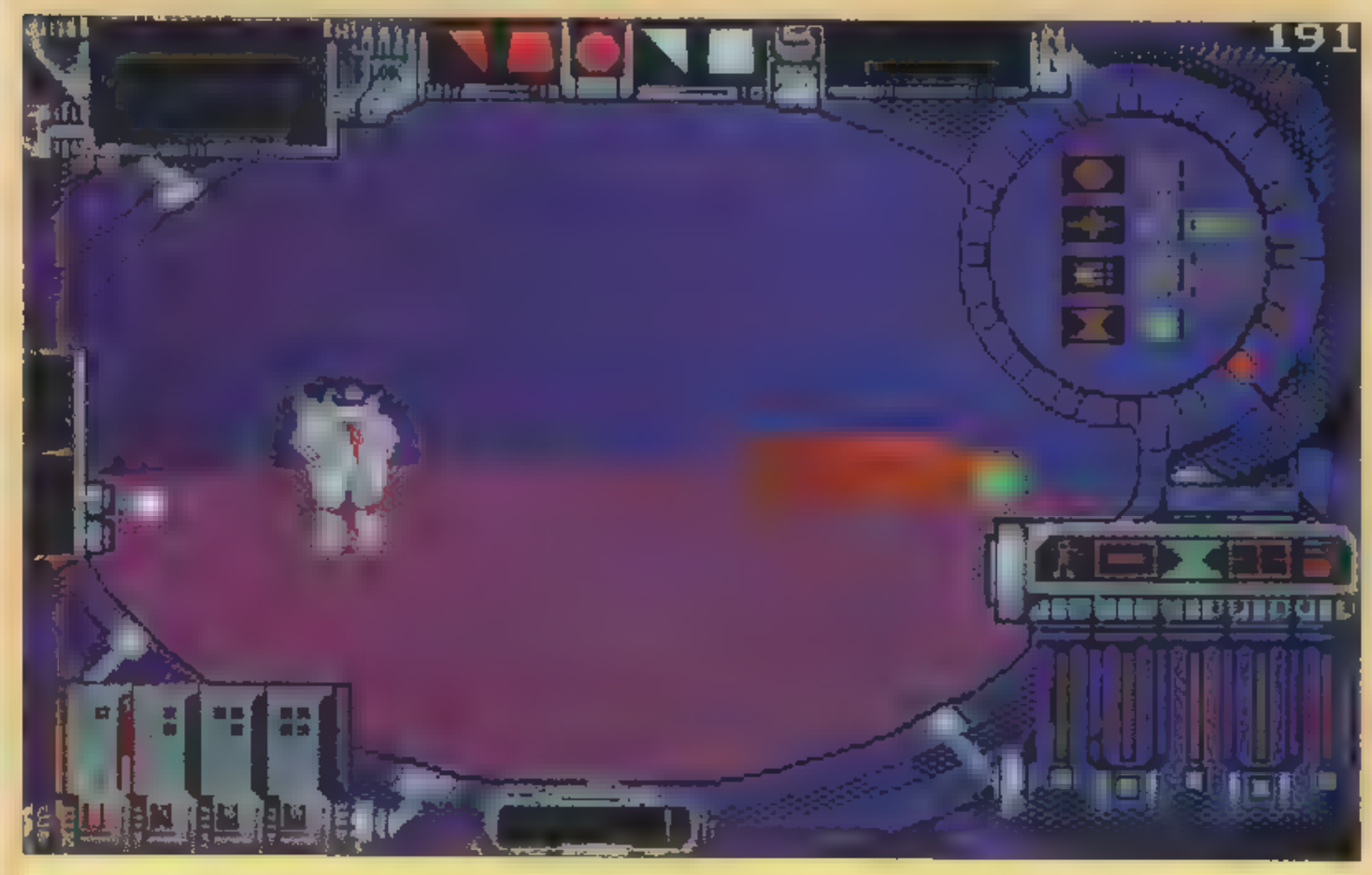
• The original entrance to the Cybercon complex is now rubble and the bridge has been destroyed. That's why you've had to find a back way in. But will you ever get out alive?



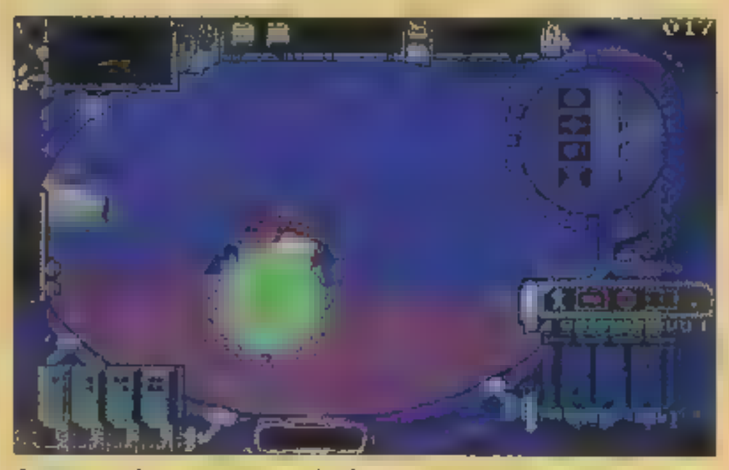
• Using the remote-controlled camera, you can see what you look like in the top lefthand corner of your suit display.



• Violent androids defend the base and many can trash your pressurised Power-Assisted suit in seconds.



• Hidden inside Cybercon is a room filled with goodies. A spare suit, a bazooka and plenty of ammo are yours for the taking.



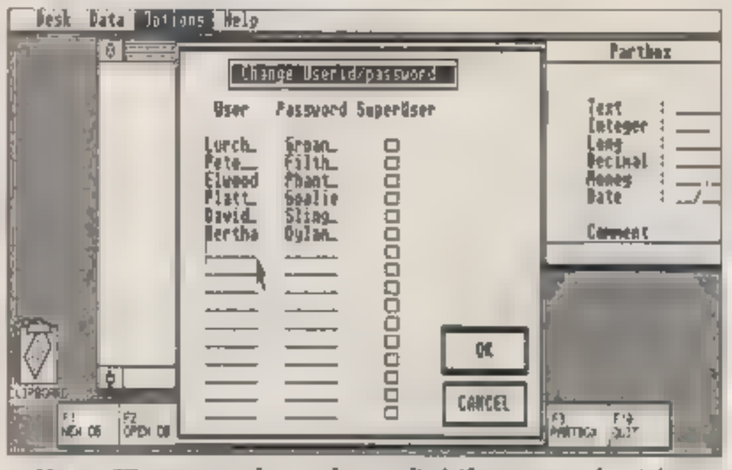
Being on the receiving end of a ball of plasma-energy is not fun. Cyber-wheels trundle around the complex,dealing death-blows if they spot you. Stand still and you might survive.

NEXT WEEK:

Gary Penn ex-editor of *The One* and a legend in his own right takes over the controls of Games Week.

DATABASE DRIVING

Powerful with plenty of useful features, the Adimens database comes into its own both at home and in the office. Tim Smith gives this sturdy software his seal of approval.



• Up to 16 passwords can be applied if you use the Adimens database in a multi-user environment.

If you are thinking of turning your ST into more than a games machine, as Atari would like you to do, then the first piece of software you will need is a sturdy database. At £129.99 you would expect the Adimens' to be just that.

The first word of warning is that the system is not the most intuitive program ever to have been written for the ST. The best advice is spend at least a couple of hours with the bulky and well illustrated manual before going near the program itself.

Half the problem when approaching the software is the scope of the work which it claims to be able to undertake. Functions from campsite management to patient analysis, via schedule monitoring and quality control are said, by the manual writers, to be "typical Adimens applications".

It is undoubtedly true that a wide range of applications are achievable by way of the system, it is just that, for the novice user of 'serious' software, the program is intimidating to get to grips with.

PARTS WORK

Setting up your first database is explained via a tutorial based on a campsite management system. You are taken through the basic of design and principles of a database in great detail. This is all well and good, in fact the depth of detail is to be praised, however it does become frustratingly pedantic. Adimen's is crying out for a quick-start guide for those people familiar with the database principle, or eager to get started.

The system comprises three main program modules: EXEC.PRG, INIT.PRG, REORG.PRG.

EXEC is the heart of the matter. It allows you to input and process your data. All the basics lie within, you can enter, modify, delete, and of course search for data. As is now standard practice with database software, there is also a capacity to export data to other programs. You can also produce standard letters from this section.

INIT provides the basic structure of the database. The term 'mask' also crops up here; to most people this means the way in which the database will actually look on screen.

REORG, unsurprisingly is used to re-organise a database if, for example, you have deleted upwards of 20 per cent of the data. More importantly, it will also attempt to re-structure a database recovered from a corrupt disk.

Once you have got to grips with the basic concepts of these three files, it's time to leap in and create your database. Although we have said that this is a daunting task for the beginner, once it has been achieved, any number of options are open to you to manipulate data.

MAKE A DATA

The typical Adimens database is made of five subsidiary physical files:

.INX, .REC, .DFN, .DCL, and .LNK. On top of these is the main .DAT file in which information relating to the name of your database is held. Rather confusingly, no data can be held there. Within each of the five physical files, up to 32 logical files can be held, called 'logic files' in the manual.

The actual actions of these files are largely irrelevant, as most of the work is carried out in the background. The Adimens database does attempt to make the good use of the ST's GEM interface, which allows most of the actual nuts-and-bolts work to be carried out beyond the sight of the user. For example, when re-organising a database using REORG, you, the user, can actually leave the machine to its own devices.

COMMAND PERFORMANCE

The Adimens database is theoretically capable of storing some 16Mbs of data. It achieves this by packing the data. In order to facilitate rapid searches and sorts, Adimens makes use of 'key features'. The maximum number of key features per database is 192 – and every file, or group of records, must have at least one key feature although no more than 63 key features can appear in any single file.

Passwording is also available. If the system is to be used in a multi-user environment then up to 16 passwords can be applied.

Field names can contain up to 30 characters. However, the total number of letters to be used in field naming cannot exceed 8,191.

Up to 65,535 records can be stored within each of the 32 logical files which are contained within the main database. Obviously this figure far exceeds the needs of most single users with 1Mb machines.

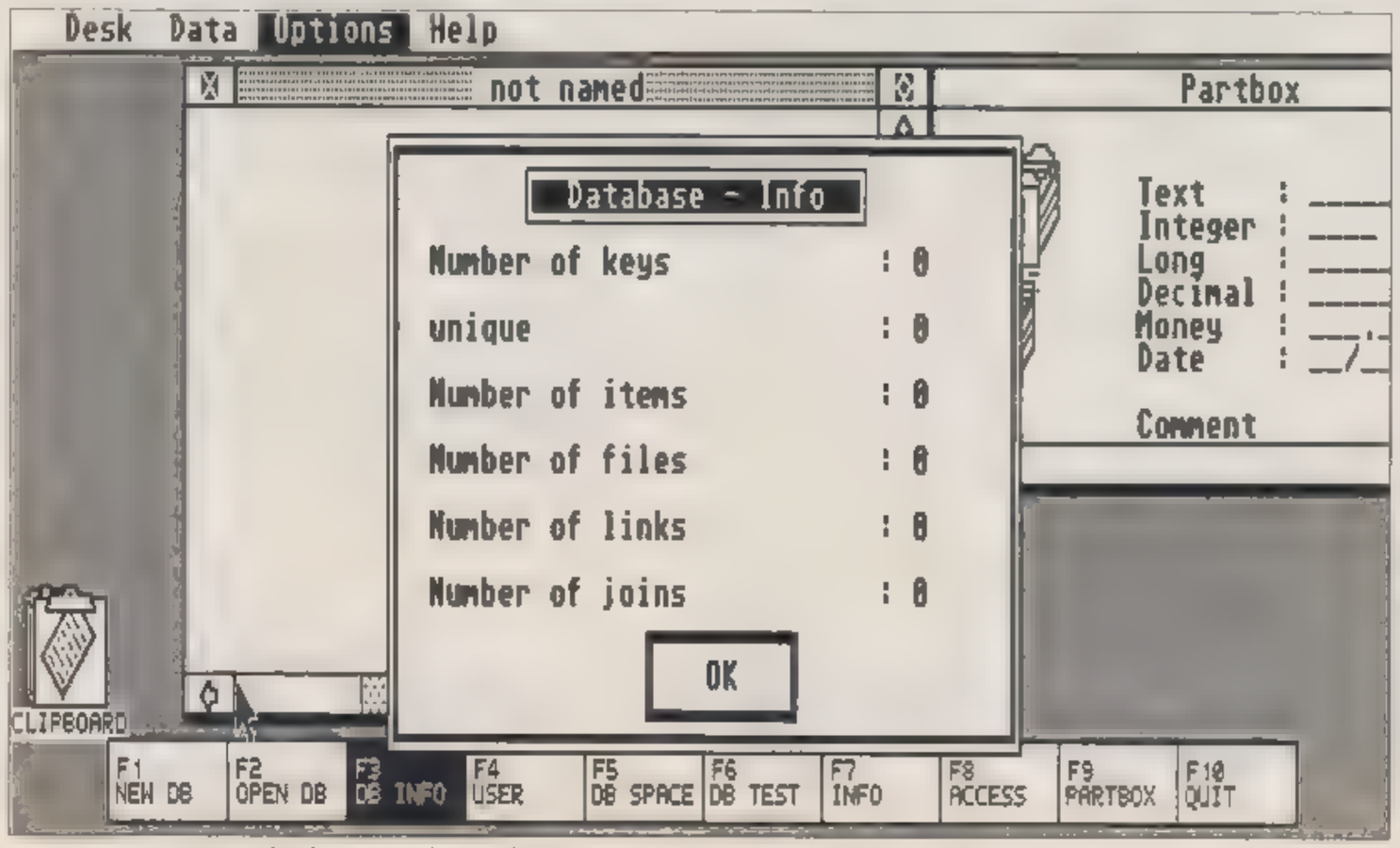
Basically, for the home user, this database exceeds any demands which could be made on it.

AND FINALLY

There are plenty of moans to be had about the initial approach to working with this database; it is intimidating and over detailed at first. However, once you have got to grips with the principles of the software, the terminology and use of the files, it offers immense scope and several highly useful functions such as the ability to produce forms, printed reports and easy back-ups.

The system is aimed primarily at the 'power user', hence the references to multi-user systems, passwording and so forth. But there is no reason why a club or group of people with a common interest should not be able to get the most from the it. Not thoroughly recommended to the home user who merely wishes to catalogue his/her stamp collection, unless it is the biggest stamp collection in the West that is. But for the user or users who require a sturdy database with plenty of features to be discovered and put into practice, Adimens gets the seal of approval. ■

Adimens GT/GTI Relational Database. ADI Software. Distributed by Kuma Computers.Tel: 0734 844 335 It costs £129.99 (£132.7 8 from May 1)



• Setting up your own database is made easy by simple to follow commands.

Cottage Computers and Software

For Top Quality Products And Top Quality Service

Dear Reader

May we welcome you to Cottage Computers and Software. With the flexibility of our service used across the board, many families and businesses are now enjoying their Computers and Software to the full, in the safe knowledge that if requested, we will support and advise them on all Computer Merchandise whenever possible.

Each month we review a wide selection of the new software available enabling us to offer Product Guidance to our Customers. Also we update our already extensive database of Computer Information covering the entire range of popular Computers. Any Customer can contact our office to request information and help with Software and we will be happy to offer all the advice we can. We are sure that you will appreciate the convenience and excellent value of this unique service.

WE OFFER A COMPREHENSIVE RANGE OF AMIGA ATARI AND P.C LEISURE AND SERIOUS SOFTWARE

ALL LATEST TITLES ARE AVAILABLE NOW JUST TELEPHONE FOR DETAILS

Cottage Top 15 Chart	Amiga	Atari	PC
Dragons Lair II	£33.99	£33.99	£33.99
Dungeon Master	£18.99	£18.99	£29.99
Elite	£19.99	£19.99	£19.99
F-19 Steatlth Fighter	£22.99	£22.99	£29.99
Kings Quest 4	£29.99	£29.99	£26.99
Kick Off II	£18.99	£18.99	£18.99
Lemmings	£18.99	£18.99	£22.99
M1 Tank Platoon	£22.99	£22.99	£29.99
Monkey Island	£18.99	£18.99	£22.99
Midwinter	£22.99	£22.99	£26.99
Mig 29	£26.99	£26.99	£29.99
Operation Stealth	£18.99	£18.99	£22.99
Pipemania	£14.99	£14.99	£18.99
Riox Dangerous II	£18.99	£18.99	£18.99
Weltris	£18.99	£18.99	£22.99

ORDER/ADVICE HOTLINE

0703 740342

LINES OPEN 6 DAYS
MONDAY - FRIDAY
10AM UNTIL 7PM
SATURDAY
10AM TO NOON
ANSWERPHONE AFTER HOURS

★ PLEASE NOTE★
COTTAGE COMPUTERS AND SOFTWARE RETAIL ONLY OFFICIAL BRAND NAMED COMMERCIAL PRODUCTS AND TOP HOLE QUALITY MERCHANDISE

You are assured of a friendly reliable service supplying computers and peripherals leisure and serious software. Overseas orders very welcome. Full back up advice service. If we can help we will. All letters answered A.S.A..P.

PUBLIC DOMAIN AND SHAREWARE LIBRARY ASK FOR DETAILS

COTTAGE COMPUTERS & SOFTWARE
NCP. Manager
P.O. BOX 34 ROMSEY HAMPSHIRE
SO51 8YW 0703 740342

ALL PRICES INCLUDE VAT. PLEASE ADD £1.00 TO EACH ORDER TO INCLUDE RECORDED DELIVERY POSTAGE AND PACKING THANK YOU

JOIN HUNDREDS OF SATISFIED CUSTOMERS NOW

33p A5 S.A.E FOR: COMPREHENSIVE CATALOGUE AND INTRODUCTORY LETTER.

CHEQUE POSTAL ORDERS AND CREDIT CARD FACILITIES AVAILABLE

VISA Access

We have been in the computer business for some considerable time and we are proud of our excellent reputation for Customer Care and Customer Service

NOTEBOOKS

Will we all be using notebooks in a few years time? In the first of a two part special, Express looks at the future of computing on the move and asks: Where is it going?

The last decade saw an explosive growth in the personal computer market which has only just begun to slow down over the last couple of years. And then, just as demand and supply both began to cool, along came the portables, precursors of the most active sector of the world market: the notebook computer.

Unlike the early 80s though, this resurgence is due almost entirely to Japanese innovation and market penetration. For although both IBM and Apple, prime movers of the 80s' technological surge, have recently joined the fray with announced notebooks, they are both heavily reliant on Japanese technical know-how. More than that, they both use Pacific Rim components in the hearts of their new machines; one could argue they merely badge Far Eastern products after designing firmware and overseeing quality control. But perhaps this is going too far. Let's face it, it's American, and to a lesser extent, British, technical design knowledge you'll find at the core of any Japanese machine. But it's Japanese companies that are forging new markets and introducing new innovations on what seems to be an almost monthly basis.

Whatever, some estimates predict that by 1995, the world market for transportables, laptops and notebooks will exceed $600m, with the notebook market set to soar at a 100 per cent annual growth rate starting this year. Conversely, the laptop market is currently expanding at around 30 per cent, with transportables or luggables at 17 per cent. Although portables account for only 12 per cent of the 24 million PCs shipped in 1990, this is set to rise to 20 per cent of the 36 million boxes expected to be shipped in 1994. One company more than any other has contributed to this predicted growth – Toshiba.

PORTABLE DEFINITIONS

TRANSPORTABLES: Typified by machines like the Osborne and early Compaqs, these luggables are designed for moving between home and office as the back of a car. With integrated monitor, keyboard, CPU and mains power unit they are the equivalent of bringing home the office – literally.

LAPTOPS: Generally thought of as weighing more than seven pounds, laptops utilise a clamshell design, incorporate LCD screens and can be powered by batteries.

NOTEBOOKS: Weighing less than seven pounds, notebooks are around the size of an A4 sheet of paper or smaller and include all the features of laptops including hard disks.

HEY TOSH!

Although, this now Japanese giant only began to produce volume sales of its portables in the US and Europe in early 1989, its machines, in essence 'small footprint' desktop computers, now account for 14 per cent of the world market; ahead of Compaq at 11 per cent and NEC at 10 per cent. While its early luggables like the 16 pound 3100 series are now real dinosaurs, they got the whole sector moving – literally. But the real breakthrough came with the launch of Toshiba's Dynabook in Japan, a notebook computer which was the first IBM compatible to be released for the Japanese domestic market; hitherto all PCs there ran on the proprietary Nippon Electric standard. The success was astronomical; catapulting Toshiba to market leader in less than a year and provoking a rash of competition among other Nippon manaufacturers. The result is a burgeoning domestic market, late to start yes; with sales only half that of the US in 1989, but estimated to be 60 per cent greater than the US by 1994; comprising just under half of the entire world market.

In Europe, things are a little quieter. International Data Corp, a leading market research consultancy, predicts that by the end of this year 1m portables will have been sold; that figure only doubling over three years. So it will be a long time before portables are anything like commonplace. Most of that growth is expected to take place in the notebook sector of the market as the combined availability of smaller components, improved screens and longer battery life take its toll.

The key to the growth of the market is this. Whereas laptop portables are perceived as replacements for desktop products, notebooks are increasingly being seen as compliments. But although Toshiba, which has 35 per cent of the portable market in Europe is the clear market leader, competitors Compaq and Zenith are rapidly increasing their market share from 15 per cent and 12 per cent respectively with the introduction of their new notebooks.

Homegrown competition from the likes of Amstrad, Psion and Husky, while geared towards more and more miniaturisation is largely reliant on either imported technology or relatively expensive local produce.

Meanwhile in the States, the hardware war is hotting up with the expected arrival this year of notebook PCs from both IBM and Apple. Leading market research company Dataquest reveals that laptop and notebook sales have quadrupled in less than two years with Toshiba and Compaq vying head to head for the lead. For the rest of the year, demand will exceed supply.Compaq for instance has a six month book of back orders; it just can't make those laptops fast enough. And that's despite the obvious shortcomings of a large number of portables compared to their desktop equivalents.

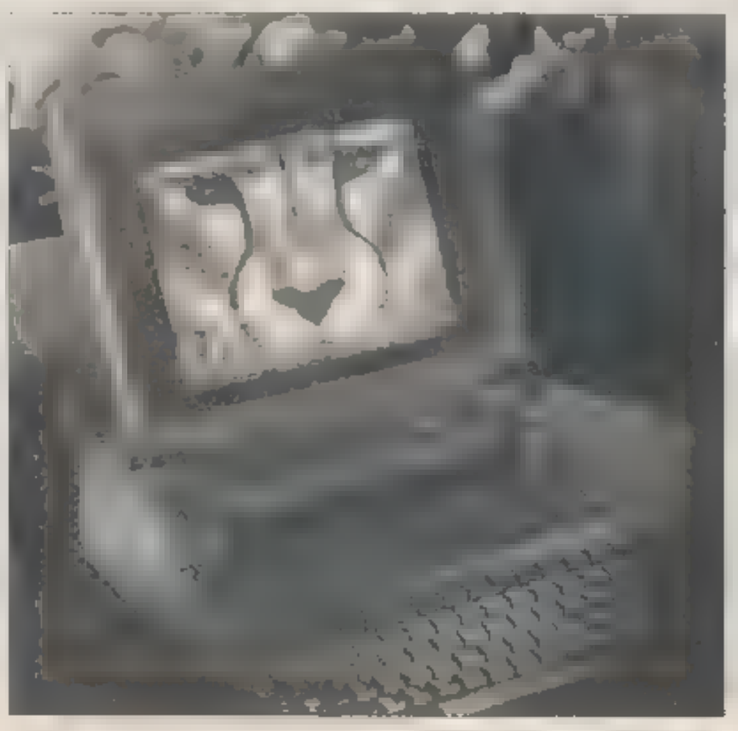
// Japanese power users really want removable, rewriteable optical storage //

But while short battery lives, difficulties in file transfers, relatively poor performance and high price tags, will, arguably, always categorise the mobile market, it is perhaps folly to expect them ever to catch up with desktop technology. Three or four years seems to be the gap in relative power and performance, or at least that's the figure Compaq is on record as quoting. As such, one can only conclude that the notebook will never replace the desktop, but merely act as a compliment.

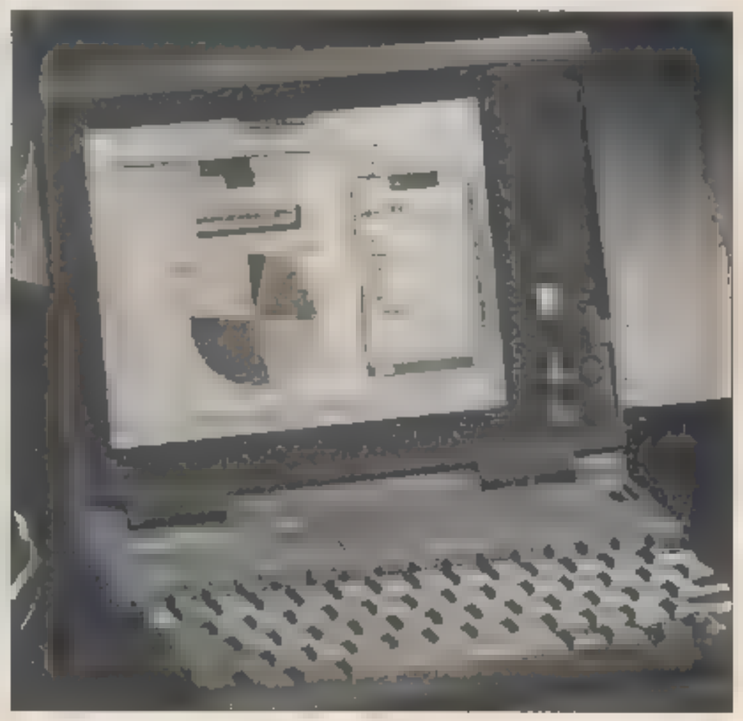
SMALL IN JAPAN?

But what of Japan itself? The operative word there at the moment is 'Keihakutansho' or 'light, thin, short, small'. There are many reasons put forward for the late

• Toshiba's latest 3100 - the first mass market portable.



• Sharp's 8501colour VGA PC state-of-the-art in portability.



• Texas Instruments' TravelMate 2000 - a slab of a notebook.

S FOR THE NINETIES

liking of the Japanese market for all things PC and the recent drive towards Keihakutansho in computing technology. Some would offer cultural reasoning to argue that its because Western style desktop machines took up too much space, or even that large CRT screens hindered the eye contact essential in Japanese business life. More likely, though, is the difficulty in representing the Japanese language on screen.

Whatever the reason, portables are now seen as more of a part of everyday business life than in corresponding US and European circles. Indeed, the move away from luggables is slower than in the West in that manufacturers are realising that the true power user, able to afford a high performance machine, wants access to real storage. Not just a piffling 20Mb or whatever, but at least 100 and beyond. Moreover, in the end, he really wants removable, re-writeable optical storage. Otherwise, the Japanese businessman is buying notebooks; typically models less than 1 inch thick, and 11 inches long by 8 inches wide; Toshiba's T/J3100SE, NEC's Note and Sharp's PC-6220 being top of the shopping list.

HOW LOW CAN YOU GO?

So where is the trend towards miniaturisation taking us and what, if any, are the boundaries?

Compressing components into a small hand-held requires state-of-the-art processes. Compaq, in designing its latest 386 notebook, the 4.75 inches x 6 inches x 1.5 inches LTE 386s/20, used technology employed in Cruise missiles and stealth fighters to 'fold' the machine's circuit board. While this machine may represent the current leading edge in functional portability, it's possible to go even smaller. The trade-off is, of course, between size, weight, power and convenience. The Poqet computer represents perhaps the smallest, fully functioning machine it's possible to deliver using current technologies. However, it has its problems and these have been reflected in sales. The display is not back-lit and the keyboard is unsuitable for touch typing, but unlike the Portfolios, Agendas and Organisers of this world, the Poqet does have full MS-DOS compatibiltiy and the support of a over a dozen leading software houses releasing applications on memory card.

Otherwise the trend is to go for other options such as pen input and touch sensitive systems like the GridPad, GO and Active Book projects or unplug-the-CPU solutions as offered by Ergo's Brick and Unisys's Power Port. These latter two designs are essentially for the executive who is looking for desktop performance wherever they may be.

However, given the trend towards the notebook what can we expect from the software that runs on it? The essential element here is the limitation poised by screen quality, processor power and storage space. Graphical User Interfaces like Windows 3 not only require at least EGA graphics cards but also 286 chips as a minimum.

So the trend is towards 386 machines with VGA displays capable of running the usual desktop applications. But Toshiba has found that over 70 per cent of would-be portable users want a machine on which to word process. And, furthermore, these are the same purchasers who are going to be buying notebook in droves over the next few years.

So, the smart money is on producing slimmed down or 'Lite' versions of popular software packages like WordPerfect's *LetterPerfect*, designed specifically for portables. Fully compatible with its desktop parents, these lite versions, whether they are spreadsheets, databases or word processors share formatting data, but omit unnecessary features like WYSIWYG.

"Whereas laptops are perceived as replacements for desktop products, notebooks are seen as compliments"

But at the end of the day it really is just a question of what the buyer is prepared to pay. By the end of this year, you'll be able to buy a 386 portable with 800Mb hard drive. You can already go out and get yourself a Sony NeWS Unix portable workstation. Here you have all the power and performance a desktop is ever likely to offer. So perhaps, after all, the days of the desktop are over. As unit prices drop, so the thinking goes, there'll just be portables and the mainframe servers you plug them into for upload/download. But for the foreseeable future, it's more of the same, only smaller. The race is on the for the first portable 486. ■

LAPTOP LEANINGS

What is the main reason companies invest in laptops? The central thrust is the notion of 'automated' sales forces. Not only can sales pitches and figures be easily updated across a nationwide force, but by using portable technology at the point of sale companies can achieve an increase in the average value of each sale.

For the laptop computer is seen, primarily, as the objective arbiter. Its pitch is preferable to the patter of the salesman. The whole point is that it says exactly what you want it to say in the most convincing way possible; by using no words at all.

TECHNOLOGY ON THE MOVE

Storage for the new generation of lightweight Japanese notebooks takes the form of thin-profile high capacity hard drives capable of storing 100 Mbytes on a 2.5-inch disk combined with solid state memory devices.

The Japan Electronics Industry Development Association (JEIDA) uses credit card sized EPROM memory cards which are rapidly becoming the de facto standard. Epson and Toshiba have joined the club; so has IBM.

Notebook screens are wholly liquid crystal based with devices developed by Sharp, Toshiba and Hitachi forming the leading edge of thin film transistor displays. Both 14 and 16-inch true colour models have been demonstrated running at a very high resolution.

But battery power handling remains one of the most difficult nuts to crack. Despite power-saving tricks like shutting down processors between key strokes, the period between re-charges is still very short; typically one to three hours being the norm. At the moment, the chemistries of lead acid and Nicad cells are competing; the former are heavier, but recharge more completely. For the future, manufacturers are working on Lithium based power systems – expensive but long-lasting.

• Panasonic's CF-170 Notebook - true lightweight portability.

• Machines like the MiniSport have made Zenith no. 3 in the world.

• The current ultimate notebook - Compaq's LTE 386s/20 .

TOP QUALITY
3.5" D S / D D
DISK MEDIA

30p

EACH

with labels
100% Guaranteed

SPECIAL OFFER WHILE STOCKS LAST !

80 CAPACITY BOXES • £4.95
10 CAPACITY CASES • 99p
3.5" CLEANER KITS • £2.95
6MM MOUSE MATS (BOXED) • £2.50
A500 DUSTCOVER • £2.99
QUICKSHOT JOYSTICK • £5.99
50 RAINBOW DISK LABELS • 99p
ROLL 1000 M/COLOR LABELS • £14.95

*AMIGA A500 BASE KIT £310**

VISA MasterCard

PLEASE ADD £2.95 P&P AND SEND YOUR ORDER TO:

START COMPUTER SYSTEMS
DEPT NCX BARBICAN HOUSE
BONNERSFIELD
SUNDERLAND SR6 0AA

** LIMITED PERIOD & SUBJECT TO CHANGE*

091 564 1400

HART MICRO

COMPUTER CONSUMABLE SPECIALIST

3.5 Bulk DS DD Disks	£0.35
3.5 Bulk HD Disks	£0.80
50 3.5 Disk Labels	£0.99
3.5 Disk Cleaner	£1.99
3.5 40 Cap Lockable Disk Box	£4.50
3.5 80 Cap Lockable Disk Box	£5.50
3.5 80 Cap Banx	£10.99
Naksha Upgrade Mouse (for Amiga and ST)	£23.99
Mouse Mat	£2.99
Mouse Pocket	£4.99
4 Player Games Lead	£4.99
Joy/Mouse ext Lead	£4.99
Joystick ext Lead	£4.99
Joystick Splitter Lead	£4.99
Monitor Plinth	£23.99
Seal 'N' Type Thru Keyboard cover	£12.99
Dust Cover	£3.99
Quick Shot Python	£9.99
Quick Shot Maverick	£13.99
Quick Shot Flightgrip	£7.99
Quick Shot Starfighter Remote Control	£32.99

*** ALL PRICES INCLUDE VAT, POSTAGE & PACKING ***

11 Stonald Ave, Whittlesey, Peterborough,
Sales Hotline: (0733) 350242

MEGA MIX

ACCESS/VISA 24HR HOTLINE 0732 351220

ALL ITEMS SENT BY FIRST CLASS POST

(DEPT NCE) 46 ASHDEN WALK, TONBRIDGE, KENT TN10 3RL

NINTENDO SEGA ATARI PC ENGINE NEO-GEO CHEETAH

NINTENDO GAME BOY ONLY £64.95

NINTENDO GAMEBOY GAMES

A BOY AND HIS BLOB	£22.95
BATMAN	£22.95
BOLDERDASH	£22.95
CASTLEVANIA	£22.95
CHASE HQ	£22.95
CONTRA ARSENAL	£22.95
DOUBLE DRAGON	£22.95
FORTRESS OF FEAR	£22.95
NEMESIS	£22.95
TMNT	£22.95
TETRIS	£22.95
SUPER MARIOLAND	£22.95
SM-GM	£2.95
SD GUNMAN/SD LEGEND	£22.95
GOLF	£2.95
LEGENDS OF DRACULA	£22.95
QIX	£2.95
RED ARIMA	£22.95
GODZILLA	£22.95
LOCK 'N' CHASE	£22.95
DUCK SHOOT	£22.95
BUBBLE GHOST	£22.95
GHOSTBUSTERS	£22.95
GREMLINS	£22.95

CHEETAH GAME MATE INCLUDING FREE GAME ONLY £54.95

ADDITIONAL GAMES ONLY £14.95 EACH

PLACE YOUR ORDER NOW!!!
NINTENDO SUPER FAMICOM
plus 2 free games
only £285.95

SUPER FAMICOM GAMES

PILOTWINGS	£44.50
GRADIUS 3	£44.50
BOMBUZAL	£44.50
F-ZERO	£44.50
POPULOUS	£44.50
FINAL FIGHT	£44.50

NEW!! NEW!! NEW!! NEW!!

SEGA GAMEGEAR
PLUS
SUPER MONACO G.P
ONLY £145.95

SEGA GAMEGEAR GAMES

SUPER MONACO G.P	£28.95
COLUMNS	£28.95
FENGO	£28.95
G-LOC	£28.95
BASEBALL	£28.95
MAZE SYNDROME	£28.95
ZAM GEAR	£23.95
WONDERBOY	£23.95

NINTENDO ENTERTAINMENT SYSTEM

NES TORTELES PACA	£69.95
DUCA TALES	£28.95
SOLAR JETMAN	£32.95
GREMLINS	£32.95
RESCUE	£29.95
GHOSTBUSTERS 2	£31.95
DR MARIO	£31.95
PAPERBOY	£28.95
GUANTLET II	£31.50
WORLD CUP	£29.95
RAD GRAVITY	£29.95

ATARI LYNX
ONLY £119.95

ATARI LYNX GAMES

BLUE LIGHTNING	£28.95
CALIFORNIA GAMES	£28.95
CHIPS CHALLENGE	£28.95
ELECTRO COP	£28.95
GATES OF ZENDECON	£28.95
GAUNTLET 3	£32.95
SUME WORLD	£32.95
MS PACMAN	£27.95
ROADBLASTERS	£27.95
XENOPHOBE	£27.95

SEGAMASTER SYSTEM ONLY £69.95
SEGAMASTER SYSTEM PLUS ONLY £89.95

SEGA MASTER SYSTEM

COLUMNS	£24.95
E-SWAT	£29.95
GAIN GROUND	£26.95
MALIA	£22.95
PACMANIA	£26.95
JUNGLE FIGHTER	£26.95
MICKEY MOUSE	£26.95
MOONWALKER	£26.95
SHOOTING GALLERY	£24.95
SUB ATTACK	£26.95
IMPOSSIBLE MISSION	£26.95
GUANTLET	£26.95
DICK TRACY	£26.95
STRIDER	£26.95
DYNAMITE DUKE	£26.95
GOLDEN AXE	£26.96
POPULOUS	£28.95
SPEEDBALL	£26.95
CALIFORNIA GAMES	£28.95

NEO-GEO

NEO-GEO/PAL	£379.95
NEO-GEO/SCART	£369.95
MAGICAL LORD	£125.95
BASEBALL STARS	£179.95
NAM 1975	£109.95
GOLF	£179.95
CYBERUP	£179.95
NINJA COMBAT	£125.95
RIDING HERO	£179.95
SUPER SPY	£169.95
MAJAK	£169.95

SEGA MEGADRIVE PLUS JOYPAD PLUS ANY GAME LISTED BELOW OF YOUR CHOICE ONLY £144.95

SEGA MEGADRIVE PLUS JOYPAD
ONLY £119.95

MEGADRIVE SPECIAL OFFER!

JAPANESE CONVERTOR	£13.95
SCART LEAD	£14.95
STEREO LEAD	£7.95

This months limited special offer!
STRIDER
WAS £42.50 NOW £34.50
ONLY WHILE STOCKS LAST!!!

SEGA MEGADRIVE GAMES

Aero Blasters	£31.95	Ghouls 'n' Ghosts	£31.95	Sorcerian	£29.50
Afterburner II	£32.50	Golden Axe	£29.50	Space Harrier II	£31.50
Alex Kid	£32.50	Granada	£29.95	Sub Cruiser	£29.95
Altered Beast	£24.95	Gynoug	£34.50	Strider	£42.95
Altered Beast II	£26.95	Hard Drivin'	£29.95	Super Baseball	£29.95
Atomic Robokid	£29.95	Heavy unit	£31.95	Super Basketball	£26.95
Arnold Palmer Golf	£32.50	Herzog Zwei	£19.50	Super Hang On	£27.50
Batman	£32.50	James Pond	£39.95	Super Monaco GP	£32.95
Battle Golfer	£34.50	Joe Montana's Football	£34.95	Super Thunderblade	£31.95
Budokhan	£34.95	John Maddens Football	£34.95	Super Volleyball	£32.50
Buster Douglas Boxing	£34.95	Kageki	£31.95	Sword of Soudan	£34.50
Crackdown	£32.95	Last Battle	£32.95	Sword of Vermillion	£44.95
Dick Tracy	£32.50	Magical Hat	£32.50	Techno Cop	£39.95
D J Boy	£24.95	Midnight Resistance	£34.50	Their Hell	£34.95
Dynamite Duke	£31.95	Micky Mouse	£34.95	Thunderforce III	£34.50
Elemental Master	£27.95	Moonwalker	£29.95	Twin Hawk	£31.95
E-Swat	£26.95	New Zealand Story	£26.95	Wonderboy in Monsterland	£32.50
Fantasy Soldier	£39.95	PGA Golf Tour	£39.95	Volfied	£31.95
Final Blow	£32.50	Phantasy Star 2	£44.95	Wonderboy III	£31.95
Forbidden City	£34.95	Rambo III	£31.50	World Cup Soccer	£24.95
Forgotten Worlds	£32.50	Ringside Angel	£34.95	Wrestle Ball	£31.50
Galaries	£34.95	Shadow Dancer	£34.95	Wrestle War	£31.50
Gain Ground	£26.95	Shining & Darkness	£31.95	Zany Golf	£34.50
Ghostbusters	£24.95	Sonic the Hedgehog	£34.95		

PC ENGINE

PC ENGINE				PC ENGINE GAMES			
PC CORE GRAPHIX	£145.95	X&B JOYSTICK	£27.95			FINAL BLASTER	£32.95
		5 PLAY ADAPTOR	£22.95			HELL EXPLORER	£32.95
PC CD ROM + INTERFACE	£295.95	PC KIDD	£32.95	AFTERBURNER 2	£32.95	NEW ZEALAND STORY	£32.95
		POWERDRIFT	£32.95	BATMAN	£32.95	NINJA SPIRIT	£32.95
CONTROL PAD	£18.95	RABIO LEPUS SPECIAL	£32.95	CHASE HQ	£32.95	OPERATION WOLF	£32.95
		W-WING	£32.95	DIE HARD	£32.95	PACLAND	£28.95

To order, state items you require, together with payment, made payable to 'Mega Mix', or place your order on our Credit Card Hotline 0732 351220. Overseas orders add £5 per item. Also orders for Video Consoles please add £2 for p+p.

MEGAMIX SOFTWARE (DEPT NCE) 46 ASHDEN WALK, TONBRIDGE, KENT TN10 3RL.

ALL Prices Include POSTAGE & V.A.T.

3½"

100% ERROR FREE WITH LABELS

Quantity	DS/DD	DS/HD	BOXES
10	4.24	7.95	0.94
20	7.75	15.25	
25	9.95	17.50	
30	11.25	21.00	
35	12.95	25.00	
40	14.25	28.25	4.80
45	15.95	31.25	
50	17.25	34.50	5.80
80	27.60	54.40	6.30
100	33.95	67.30	6.75

Full No Quibble Replacement Guarantee
Boxes are supplied with dividers and 2 keys.

CUMANA CAX354 3 1/2" External Drive
Data Lead, Enable/Disable Switch

One Year Warranty £59.95

Credit Card Orders (9 AM - 10 PM 7 Days)
071 920 0304

Cheques payable to:
DataGEM Limited
1 Paul Street
London EC2A 4JJ

Callers Welcome
(Mon - Fri 10 - 6)

MVL SOFTWARE

MAIL ORDER DIVISION OF ESTABLISHED RETAILER
☎ 0354 56433 24HR HOTLINE

UK VERSION

SEGA MASTER SYSTEM £74.99 SEGA 16 BIT INC GAME £184.99
SEGA MASTER SYSTEM + £94.99
GAMES FROM £29.99 GAMES FROM £29.99

ACCESSORIES FOR ALL MACHINES PHONE FOR DETAILS

★ MVL GAMES RENTAL CLUB ★
CALL FOR DETAILS

WE STOCK LARGE SELECTION OF SOFTWARE FOR ALL CONSOLES & COMPUTERS

SEGA 16 BIT INC GAME £169.99
TO TAKE JAP/ENGLISH/AMERICAN CART. MASSES OF SOFTWARE
PHONE FOR DETAILS

PC ENGINE HANDHELD P.O.A
SUPER FAMICON P.O.A
GAMEBOY INC GAME £69.99
AMSTRAD GX4000 + GAME £94.99
NINTENDO TURTLE SET £77.99
ATARI LYNX & GAME £129.99
SOFTWARE £29.99

SELECTION OF SOFTWARE & ACCESSORIES FROM £5.99

"JUST A SELECTION OF WHAT'S AVAILABLE"
ALL ENQUIRIES WELCOME - "FRIENDLY FAST SERVICE GUARANTEED"
£1 P&P SOFTWARE, £5 P&P UK; "ACCESS & VISA"
OVERSEAS CUSTOMERS WELCOME.

CHEQUES & PO PAYABLE TO:-

"MVL"
WHITEHART BUILDING, NENE PARADE, MARCH, CAMBS PE15 8PH

WESTONING LTD

STOCK CLEARANCE - EXCLUSIVE TO NCE READERS
ONE WEEK ONLY - WHILE STOCKS LAST!

3 1/2" DS/DD

100	£33.00
250	£75.00
500	£135.00
1000	£260.00
40 box	£4.00
80 box	£4.50

KAO BRANDED MF2DD 10's £5.75

AMIGA

A1500	£699.00
A500	£299.95
3 1/2 drive	£50.00
1 1/2 meg clock	£94.00
1 1/2 w/o clock	£90.00

PHILIPS CM8833 MKII £210

STAR

LC10	£145.00
LC24-10	£180.00
LC24-200	£227.00
LC24-200 col	£275.00

PRICES INCLUDE VAT AT 17 1/2% AND POST. ADD £9.00 NEXT DAY

WESTONING LTD. NCE OFFER
12 SANDERSON ROAD, WESTONING,
BEDFORD, MK45 5JY
TEL: (0525) 718668/(0836) 775060

COMPETITION

WIN! WIN! WIN! WIN! WIN!

£1,000 GAMES GIVE-AWAY

We have 50 copies of *Turrican I* for Amiga, ST, C64, Spectrum and CPC owners. Answer the questions and join in the joystick waggling bonanza . . .

Eager gamers were grabbed by the joystick when *Turrican 1* first appeared and it was soon hogging the charts for all the major formats. Its action, graphics and gameplay coupled with quality programming across the 8-bit and 16-bit formats all add up to the fact that *Turrican I* offers both excitement and strategy without losing playability

After several obsessive sessions with *Turrican*, *Express* gamers went on bended knees to editor Storer demanding *Turrican* for all as a matter of right. Eventually a compromise was reached and, after frantic conferences with publisher Rainbow Arts, supplies of the addictive game were promised.

So if you have an Amiga, ST, C64, Spectrum or CPC you could be one of our luckier *Express* readers, because we now have 50 copies of *Turrican I* (10 of each format) to dangle beneath your aquisitive noses. To get a chance to win one, all you have to do is answer a few questions and fill in a tie-breaker – or if you prefer you can walk up to editor Andy Storer in the street, open your wallet and say: "Here, Andy, help yourself."

Meanwhile we've taken a sneak-peek at the sequel, *Turrican II*. Pwheeeee, what a monster! So to add a little more spice to the competition, one of the lucky winners – chosen almost entirely at random – will get our review copy of Rainbow Arts' mega-follow-up once we've weaned ourselves off it...

1) Which machines is *Turrican I* available on?
a) JCB, Tube train, and electric toothbrush
b) Amiga, ST, C64, Spectrum, CPC
c) Mainframe, workstation, photocopier, Macintosh, blender
d) Microwave, laser, fax, Archimedes and cooker

2) Which software company publishes *Turricans I* and *II*?
a) Microsoft
b) Digital Research
c) Rainbow Arts
d) Woman's Realm

3) How many pins in a standard Amiga joystick connector?
a) 5
b) 6
c) 15
d) 9

4) Which of these games is in the Amiga Hot 100 of all time
a) *Desk Croquet*
b) Porky Pig's *Backgammon*
c) *Turrican I*
d) *Pocket Billiards II*

5) Which of these games originated in the USSR?
a) Gorbachev's *Lubianka Simulator*
b) *Ivan the Runcible*
c) KGB *Attack Chess*
d) *Tetris*

Complete the tie-breaker in 12 words or less and send your entry on a postcard or welded to the outside of an envelope to the *Express* £1,000 *Turrican* Competition, 29, Monmouth Street, Bath BA1 2BW. ■

£1,000 *TURRICAN I* COMPETITION

Name .....

Address .....

.....

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Killing people in computer games won't corrupt me because .....

.....

.....

MAKE SURE YOU GET A COPY OF NEXT WEEK'S EXPRESS

Complete this form and hand it to your newsagent

TO THE NEWSAGENT: Please reserve me ..... copy/copies of *New Computer Express* every week, beginning with issue 128, out on 25th April.

NAME .....

ADDRESS.....

.....

TELEPHONE NUMBER .....

To the newsagent : *New Computer Express* is published by Future Publishing and is available from your local wholesaler. Send back all your Future shop save coupons for entry in a free draw to: Kate Hodges, Future Publishing, 30 Monmouth Street, Bath BA1 2BW.

COMING NEXT THURSDAY

Pen Input Handhelds
We've seen the future – this is how it works

Let's Get Busy
Ivy Educational's suite of seven business start up softwares reviewed

Amiga 1500
The affordable upgrade that's expandable too – is it worth the money?

PLUS
• Hot news
• Front End
• Games Week
• Whole Wired World
• Tech Tips
• Circuit City
• Express On-line
• Express Mail
• The PD Column
• Programming
• Columns for: Amiga, Archimedes, CPC, C64, Macintosh,PC, Spectrum and ST

AND
Part One of our £5,000 Giveaway!!!

NEW COMPUTER EXPRESS

EDITOR • Andy Storer
NEWS EDITOR • Colin Campbell
TECHNICAL EDITOR • Keith Pomfret
PRODUCTION EDITOR • Julie Tolley
ART EDITOR • Amanda Cook
SUPPLEMENTS EDITOR • Tim Smith
STAFF WRITER • Dave Golder

CONTRIBUTORS:
• Steve Gold • Jason Holborn
• Frank O'Connor • Kadyn Fitz-Williams
• Mary Branscombe • Robin Alway
• Ken Coumarin • Andrew Roberts
• Andy Hutchinson • Ian Wrigley
• Rod Lawton • Neil Jackson

CIRCULATION DIRECTOR • Sue Hartley
AD MANAGER • Helen Kirkhope
SENIOR AD EXECUTIVE • Cheryl Beesley
AD EXECUTIVES • Tim Partridge
• Siobhan Kennedy-Coyne
AD PRODUCTION • Frances Wasem
AD TYPESETTING • Terry Mackereth
PUBLISHER • Graeme Kidd
ABC audited circulation July-December 1990:20,204 copies per week
We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below. While every care is taken in the preparation of *New Computer Express*, Future Publishing cannot be held responsible for the consequences of any errors that may occur.
• Subscriptions: The Old Barn, Somerton, Somerset (0458) 74011
• Printed by Redwood Press, Melksham, Wilts
• Distributed in UK and Eire by MMC Ltd (0483 211222), rest of world by Comag (0895 444055)

© Future Publishing Ltd

30 Monmouth Street, Bath BA1 2BW

CONTACTS
Tel: 0225 442244
Fax: 0225 482018
E-mail : CIX @ astorer
GOLD @ 84:TXT152
PRESTEL @011112623

'Your guarantee of value'

This magazine comes from Future Publishing, a company founded just six years ago, but which now sells more computer magazines than any other publisher in Britain. We offer:

Better advice. Our titles are packed with tips, suggestions and explanatory features, written by the best in the business.

Stronger reviews. We have a cast-iron policy of editorial independence, and our reviews give clear buying recommendations.

Clearer design. You need solid information fast. So our designers highlight key elements by using charts, diagrams, summary boxes, annotated photographs, etc.

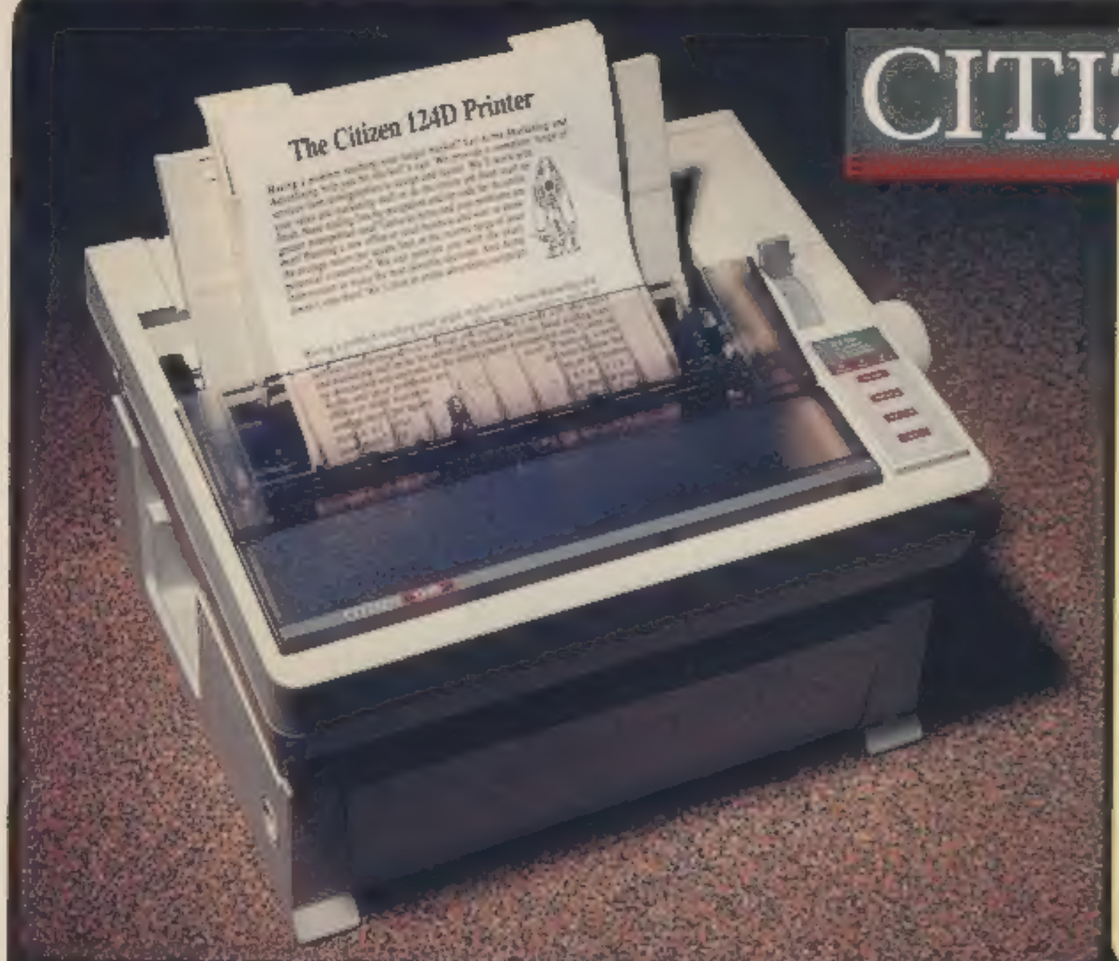
More reader interaction. We draw strongly on readers' contributions, resulting in the liveliest letters pages and the best reader tips. Buying one of our magazines is like joining a nationwide user group.

Better value for money. More pages, better quality magazines you can trust.

Future PUBLISHING

Home of Britain's finest computer magazines.

Amstrad Action • 8000 Plus • PC Plus
Amiga Format • ST Format
New Computer Express • Your Sinclair
Commodore Format • Sega Power
Amiga Power • Amiga Shopper
MacPublishing



CITIZEN PRINTERS

Silica presents some great offers on the award winning range of high quality dot matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and a very high quality of output. Our confidence in the quality of Citizen printers is such that we are pleased to offer a unique two year guarantee with every printer. Plus, if you purchase your Citizen printer from us, we will give you a Silica Printer Starter Kit (worth £29.95), *FREE OF CHARGE!*

FREE DELIVERY
Next Day - Anywhere in the UK mainland

FREE STARTER KIT
Worth £29.95 - With every Citizen printer from Silica.

FREE COLOUR KIT
Worth £39.95 - With Swift 9 and Swift 24 printers.

2 YEAR WARRANTY
Silica offer a 2 year warranty (including the printer head) with every Citizen printer purchased from Silica.

WINDOWS 3.0
Free Windows 3.0 driver - In the Silica Starter Kit.

FREE HELPLINE
Technical support helpline open during office hours.

MADE IN THE UK
Citizen printers are manufactured to high standards.

144 CPS DRAFT 9 PIN

CITIZEN 120D+

The Citizen 120D+ is one of the UK's best selling printers. It has a stylish appearance and excellent features and performance for such an inexpensive printer. The 120D+ is available with either a serial or parallel interface and is an ideal first printer.

- *9-pin Printhead*
- *Print Speed 144cps Draft*
- *30cps NLQ*
- *Epson & IBM Graphics Emulation*
- *Pull Tractor & Bottom Feed*
- *Superior Graphics - 240x216dpi*
- *FREE Starter Kit*

RRP	£228.85
STARTER KIT	£29.95
TOTAL RRP:	£258.80
SAVING:	£110.45
SILICA PRICE:	£148.35

£129 +VAT = £148.35

144 CPS DRAFT 24 PIN

CITIZEN 124D

The award winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- *24-pin Impact Printer*
- *Print Speed 144cps Draft*
- *2 LQ Fonts (48cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *Superior Graphics - 360x360dpi*
- *FREE Starter Kit*

RRP	£320.85
STARTER KIT	£29.95
TOTAL RRP:	£350.80
SAVING:	£144.95
SILICA PRICE:	£205.85

£179 +VAT = £205.85

192 CPS DRAFT 9 PIN

SWIFT 9 - COLOUR!

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturer's 24-pin models.

- *9-pin Impact Printer*
- *Print Speed 192cps Draft*
- *3 NLQ Fonts (48cps)*
- *8K Buffer*
- *Epson & IBM Graphics Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

FREE! COLOUR KIT

RRP	£309.35
STARTER KIT	£29.95
COLOUR KIT	£39.95
TOTAL RRP:	£379.25
SAVING:	£161.90
SILICA PRICE:	£217.35

£189 +VAT = £217.35

192 CPS DRAFT 24 PIN

SWIFT 24 - COLOUR!

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1990. Its rapid print speed, quality and black or colour options, make it a natural choice.

- *24-pin Impact Printer*
- *Print Speed 192cps Draft*
- *4 NLQ Fonts (84cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

FREE! COLOUR KIT

RRP	£419.75
STARTER KIT	£29.95
COLOUR KIT	£39.95
TOTAL RRP:	£489.65
SAVING:	£191.80
SILICA PRICE:	£297.85

£259 +VAT = £297.85

PRINTER ACCESSORIES

SHEET FEEDERS		
PRA 1200	120D	£74.75
PRA 1215	124D/Swift 9/24	£96.60
PRA 1228	124D/Swift 9/24	£46.00
SERIAL INTERFACES		
PRA 1189	120D+	£62.10
PRA 1209	Swift 9/124D	£34.50
PRA 1709	Swift 24	£28.75
PRINTER STAND		
PRA 1242	124D/Swift 9/24	£26.95
ORIGINAL RIBBONS		
RIB 3502	120D/Swift 9 Black	£4.03
RIB 3924	124D/Swift 24 Black	£5.18
RIB 3936	Swift 9/24 Colour	£17.25
COLOUR KITS		
PRA 1236	Swift 9/24	£39.95

All prices include VAT and Free delivery.

FREE! STARTER KIT

Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately, FREE OF CHARGE!

- *3½" Dual Format Disk with Amiga & ST Printer Drivers*
- *3½" Disk with Drivers for Microsoft Windows 3*
- *2 Metre Parallel Printer Cable*
- *200 Sheets of High Quality Continuous Paper*
- *200 Continuous Address Labels on Tractor Feed*
- *5 Continuous Envelopes on Tractor Feed*

If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref: KIT 5000) for the special Silica price of £24.95 - £5 off RRP!

NORMAL RRP **£29.95**

SILICA SYSTEMS OFFERS YOU

- *FREE OVERNIGHT COURIER DELIVERY:* On all hardware orders shipped in the UK.
- *TECHNICAL SUPPORT HELPLINE:* Team of PC technical experts at your service.
- *PRICE MATCH:* We normally match competitors on a "Same product - Same price" basis.
- *ESTABLISHED 12 YEARS:* Proven track record in professional computer sales.
- *£13M TURNOVER (with 60 staff):* Solid and reliable with maintained growth.
- *BUSINESS/EDUCATION/GOVERNMENT:* Volume discounts available for large orders.
- *SHOWROOMS:* Demonstration and training facilities at our London & Sidcup branches.
- *THE FULL STOCK RANGE:* All of your PC requirements from one supplier.
- *FREE CATALOGUES:* Will be mailed to you with offers and software/peripheral details.
- *PAYMENT:* By cash, cheque and all major credit cards.

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is one of the UKs leading independent computer dealers and provides a quality service to users at home, in education and in business throughout the nation. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature on the Citizen printer range and begin to experience the "Silica Systems Service".

SILICA SYSTEMS

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-309 1111**	
Order Lines Open:	Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA	**Tel: 071-580 4000**	
Opening Hours:	Mon-Sat 9.30am-6.00pm	No Late Night Opening	Fax No: 071-323 4737
LONDON SHOP:	Selfridges (1st Floor), Oxford Street, London, W1A 1AB	**Tel: 071-629 1234**	
Opening Hours	Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Extension: 3914
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	**Tel: 081-302 8811**	
Opening Hours:	Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017

To: Silica Systems, Dept NCE-0391-54, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

.....

..... Postcode: .....

Tel (Home): ..... Tel (Work): .....

Company Name (if applicable): .....

Which computer(s), if any, do you own? .....

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

WE'VE GOT THE POWER

A POWER - CRAZED COLLECTION OF No.1 HITS

PLUG INTO THIS GALAXY OF FUN AND EXCITEMENT FOR YOUR COMPUTER

X-OUT
CHASE HQ
TURRICAN
ALTERED BEAST
RAINBOW ISLANDS

AMIGA • ATARI ST
SPECTRUM • COMMODORE
AMSTRAD (Compatible with CPC Plus)

POWER UP BY ocean

OCEAN SOFTWARE LIMITED • 6 CENTRAL STREET • MANCHESTER • M2 5NS • TEL: 061 832 6633 • FAX: 061 834 06[illegible]0